

CLASS-XI
ENGLISH CORE (301)
SAMPLE PAPER- 2024-25

TIME ALLOWED: 3 HOURS

MAXIMUM MARKS: 80

GENERAL INSTRUCTIONS:

1. This paper comprises 3 sections- Reading Comprehension (26 marks), Writing Skills & Grammar (23 marks) and Literature (31 marks)
2. Attempt all questions.
3. Do not write anything on the question paper.
4. All the answers must be correctly numbered as in the question paper and written in the answer sheet provided.
5. Ensure that questions of each section are answered together.
6. Read each section carefully and follow the instructions.
7. Adhere to the word limit wherever prescribed.

Section –A (Reading Skills)

(26 Marks)

Typology	Reading Skills	Conceptual understanding, decoding, analysing, inferring, interpreting, appreciating literary conventions and vocabulary, summarising and using appropriate format/s
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I. Read the following passage very carefully:

(10)

1. In 2019, wildlife conservationists, especially those caring for bears, celebrated a very special anniversary — the 10th anniversary of the rescue of the last 'dancing' bear from India's streets. The sloth bear named Raju, who was eight years old at the time, was freed from Chikkaharavalli in Karnataka by Wildlife SOS, an organization dedicated to saving and rehabilitating abused wildlife.

2. This informal roadside entertainment, once rampant on Indian streets, came from a 400-year-old tradition of man's pursuit of divertissement. But the story behind the performances is far from pleasurable. Any service derived from animals is made possible only through training practices grounded in deep cruelty. The bears for instance, would be captured as cubs. Their muzzles would then be pierced with hot iron rods, and threaded with thick ropes that, when tugged, made the animals jump and prance in pain.

3. "Elephants in particular are social animals, and do very poorly in isolation," explains conservationist Puja Mitra. Global studies have long recorded high emotional intelligence in elephants. Extended periods of isolation from their peers and societies coupled with cruel training practices can induce post-traumatic stress syndrome (PTSS) in wild elephants similar to humans like abnormal startle responses, depression, unpredictable social behaviour and aggression. Animals with PTSS require long-term skilled care and consistent medical aid to recuperate.

4. Provisions in the Prevention of Cruelty to Animals Act, 1960, enforced a ban on using wild and protected animals — bears, monkeys, panthers, lions, and tigers — for entertainment, such as in circuses. Sadly, elephants continue to be used in temples, for transportation and labour in the timber and the travel and tourism industries. Monkeys, eagles, owls and other animals are used by people for occult rituals, or

as pets, despite the fact that such animals are not suited for domestication or captivity. A 2016 study by the World Wildlife Fund examining how dolphins responded to human and vehicular presence found that 98 percent of the time the dolphins became highly stressed, and would deep dive to avoid the intrusion.

5. What can an individual do to help mitigate the needless suffering of wild animals? To start with, leave them alone. Wildlife SOS began the 'Refuse to Ride' campaign, by reaching out to tourists and raising awareness of the suffering underpinning their holiday fun. Terra Conscious, a social enterprise promotes sustainable travel through a community-partnership model to transform dolphin-watching, a popular tourist activity in coastal destinations. The solution to this issue hinges in large part on kindness, compassion and basic respect for the natural world.

(Source- Reader's Digest- Leave the Wild Things Be- By- Swati Sanyal Tarafdar)

I.A) On the basis of your reading the passage, answer the following questions by choosing the best of the given options: (1x5=5)

i. Choose an option which describes a situation similar to the dolphins which become highly stressed and deep dive to avoid human vehicular intrusion.

- a) Manatees are calm and peaceful and can manage human interaction in their natural habitat.
- b) Jumping spiders are fans of cameras, sometimes jumping at the users.
- c) Gropers greet snorkellers and follow them around.
- d) The red fox, shies away from its daytime activity, often exhibiting increased nocturnal activity.

ii. The option that best describes the central idea of the passage is-

- a) Helping to mitigate needless sufferings of aquatic animals.
- b) Boycotting street entertainment involving animals.
- c) Kindness, compassion and basic respect for the natural world.
- d) Suggesting long-term care and medical aid for abused wildlife.

iii. The Prevention of Cruelty to Animals Act, 1960 couldn't protect the elephants. Select an option that supports this statement.

- a) They continue to be used for labour in the timber and the travel and tourism industries.
- b) They are captured as cubs and threaded with thick ropes.
- c) They are used by people for occult rituals.
- d) They are domesticated in captivity.

iv. **Statement A:** Wild elephants display startle responses, depression and aggression.

Statement R: Extended periods of isolation from their peers coupled with cruel training practices are responsible factors.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is the incorrect explanation of A.
- c) A is true but R is false.
- d) A is false but R is true.

v. According to the passage, which of the following can be considered as the reason for animals being threaded with thick ropes and their muzzles pierced with hot iron rods?

- a) Saving and rehabilitating abused animals.
- b) Subjecting animals to cruel training practices for entertainment business.
- c) Helping to lessen the sufferings of animals.
- d) Understanding the emotional intelligence of social animals.

I.B) Answer the following questions:

(1x5=5)

- vi. The Prevention of Cruelty to Animals Act, 1960 is a blessing for the wild and protected animals. Elaborate.
- vii. In what way is the story behind the dancing bears' performances far from pleasurable?
- viii. List two measures to help mitigate the needless suffering of wild animals.
- ix. Comment on the analogy between human and animal responses to post-traumatic stress syndrome.
- x. Find a word from paragraph-2 which means the same as recreation.

II. Read the following passage carefully:

(8)

1. For those who start and end their day with a cup of coffee, the Americano, cappuccino or latte at Starbucks and Blue Tokai, or any of the other coffee aficionado's haunts in India like Third Wave and Tim Hortons, tasted just the same last year. But coffee planters in the country were served a bitter brew, as a dip in prices in the international market and factors like erratic weather and lower domestic yields made it difficult for them to even recover investments.

2. The current hike in coffee prices is driven by a supply shock in Robusta (a species of coffee plant), say industry insiders, owing to a dry spell in Vietnam. The country, along with Brazil, supplies nearly 60 percent of the global coffee production. The hike in Robusta prices has had a direct and welcome impact on planters in India, where nearly 70 percent of the country's projected coffee production of 374,200 tonnes for 2023-24 was Robusta, according to the Coffee Board of India. The increased prices took many by surprise. Robusta prices in Karnataka shot up even further, by as much as Rs 2,750- 3,100 per bag (depending on the processing of the beans). Nobody expected prices to gallop like this.



3. India's share in global coffee production was about 3.4 percent in 2021- 22, with the country producing 5.7 million bags (of 60 kg each) compared to the global figure of 167 million bags, shows a July 2023 analysis by the Coffee Board of India. Exports crossed the billion-dollar mark that year, at \$1.02 billion. Currently, India is the world's fifth largest exporter of coffee, with exports of \$1.28 billion in 2023- 24. The top destinations for Indian coffee include Italy, Germany, Belgium, the Russian Federation, Turkey, Poland, Jordan, Libya and the US.

4. Planters point out that costs of inputs and labour have been going up even as the weather patterns have affected yield. Growers need to increase productivity if the industry has to survive. Till then, the coffee planter can savour the cheer that the current trend of high prices has brought.

(Source- India Today, INDIAN COFFEE BLOSSOMS By- Ajay Sukumaran)

II.A) On the basis of your reading the passage, answer the following questions by choosing the best of the given options: (1x4=4)

i. Select the factor not responsible for coffee planters in India being served a bitter brew.

- a. lower domestic yield
- b. erratic weather
- c. hike in coffee prices
- d. dip in coffee prices

ii. Select the option that conveys the opposite of 'savour the cheer' in para-4.

- a. endure the gloom
- b. bask in the joy
- c. revel in the delight
- d. relish the moment

iii. Rank the Coffee Kings in order of their coffee production in the year 2023-24.

- a. Kerala, Tamil Nadu, Non-Traditional Areas, The Northeast, Karnataka
- b. Karnataka, Kerala, Tamil Nadu, Non-Traditional Areas, The Northeast
- c. Non-Traditional Areas, The Northeast, Karnataka, Kerala, Tamil Nadu
- d. The Northeast, Karnataka, Kerala, Tamil Nadu, Non-Traditional Areas

iv. Statement-A: Robusta prices in Karnataka galloped.

Statement-R: A good yield in Vietnam led to a spike in prices.

- a. Both A and R are true and R is the correct explanation of A.
- b. Both A and R are true but R is NOT the correct explanation of A.
- c. A is true but R is false.
- d. A is false but R is true.

II.B) Answer the following questions: (1x4=4)

v. India's share in global coffee production was about 3.4 percent in 2021- 22. Comment upon the status of India as an exporter in the year 2023-24.

vi. Along with natural intervention, human factors like _____ and _____ have affected coffee plantation yield.

vii. The only redeeming factor for the planters is _____.

viii. Find a word in para-1 which is similar in meaning to 'connoisseur'.

III. Read the following passage carefully: (8)

1. Let's Dance! It's good for your body, soul and even your brain. Evidence shows that dancing can boost brain health and help manage symptoms of neurocognitive and movement disorders, including Parkinson's, multiple sclerosis (MS), Alzheimer's, dementia and brain injury. A 2021 York University study showed that weekly dance training that targets balance, coordination, flexibility, creativity and memory work can improve Parkinson's symptoms.

2. What is it about dance that's different from a brisk walk or other aerobic exercises? Helena Blumen, a cognitive scientist says, the intricate mental multitasking that dance requires engages various parts of the brain at the same time, which can lead to the strengthening of neural connections across different regions. Basically, dancing requires more brain power than simpler repetitive exercises.

3. The effect extends beyond dance class to the real world. Studies have shown the benefits of dance for people with conditions ranging from MS and Huntington's disease to autism and depression. Dance

therapy might even help people with brain injuries. People with severe traumatic brain injury showed that dance-based rehabilitation might improve mobility, cognition and overall well-being.

4. In addition to the physical and neurological benefits, dance can also help people accept what their bodies can and can't do, making it easier to live with the diseases they have. Dancing with others makes people feel less different, and it helps combat the loneliness and isolation of living with a chronic illness. The ultimate aim is that people feel joyful, get more involved in their community and explore the limitless possibilities.

(Source- Reader's Digest- Let's Dance! By- Claire Sibonney)

III.A On the basis of your reading of the above passage, make notes using headings and sub-headings. Use recognisable abbreviations wherever necessary. Suggest a suitable title for the passage. (5)

III.B Write a summary of the above passage in not more than 50 words using the notes made by you. (3)

SECTION – B (GRAMMAR & CREATIVE WRITING SKILLS) (23 Marks)

Typology	Grammar & Creative Writing Skills	Conceptual understanding, application of rules, analysis, reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, evaluation and creativity
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IV. GRAMMAR

(i) Fill in the blanks using the correct form of the words given in the brackets. Attempt ANY FOUR. (1X4=4 marks)

In 1984, Swiss couple Emil and Liliana a)_____ (would climb/ climbed/ had climbed/ were climbing) into their bright blue Toyota Land Cruiser and b)_____ (would begin/ had begun/ were beginning/ began)the world's longest road trip, which c)_____ (continues/ continued/ had been continuing/ will continue) to this day. In forty years, they d)_____ (would travel/ travelled/ had travelled/ have travelled) more than 7.41 lakh kilometres across 186 countries. Now in their 80s, the couple is currently on the road to Africa and e)_____ (holds/ are holding/ will hold/will be holding) the Guinness World Record for the longest driven journey.

(ii) Transform the following sentences as per the instructions given below: (1X3=3 marks)

- a) They considered me a rebel. (Change the voice)
- b) "I didn't eat breakfast", said Reena. (Change to reported speech)
- c) I have not been well, _____ (return, picnic) (Fill in the blank with an appropriate adverb clause using words in the bracket)

V.CREATIVE WRITING SKILLS

(i).Attempt ANY ONE of the two, in about 50 words. (3)

A. You are Neelanjana Mehta of 74, Jubilee Hills, Hyderabad. You run a PG accommodation for girls. Draft an advertisement in not more than 50 words for publication in The Indian Express under TO LET column. Include relevant details like location, type of accommodation, facilities, rent etc.

OR

B. Indian restaurant industry is driven by the growing eating out factor. This calls for quick services, variety in cuisine and value for money. Restaurants and eat outs are gearing for a massive expansion in seating capacity for the consumers. Being in the same business, you wish to open an eating point in DDA market, VikasPuri. Draft an advertisement in 50 words for publication in The Hindustan Times for purchase of a small space (10 ft × 12 ft) in the market under the Classified Column ‘Property’.

(ii). Attempt ANY ONE of the two, in about 50 words.

(3)

A. According to a UNICEF study, at least 36% Indian students are subject to harassment and bullying in school campuses. That’s slightly higher than what UNICEF says is the global average. Children are subjected to name-calling, shaming, exclusion, online trolling, and even physical harm. There’s an immeasurable emotional and psychological toll on children, leading to anxiety and depression. Design a poster in 50 words expressing concern over the serious issue of bullying and its consequences.

OR

B. As per an article by Dabur Arogya, over the last few decades, there has been an upsurge in the prevalence of yoga. Medical professionals and celebrities are also adopting and recommending the regular practice of yoga due to its various benefits. Design a poster in 50 words highlighting the benefits of practising Yoga in our daily lives.

(iii). Attempt ANY ONE of the two, in about 120-150 words.

(5)

A. The year 2024 marks the 25th anniversary of the United Nations General Assembly’s adoption of the ‘Declaration and Programme of Action on a Culture of Peace’. As the Head Girl/Boy of your school, write a speech in about 120-150 words on the topic ‘World Peace: A Collective Responsibility’ highlighting the importance of individual and collective efforts in achieving and maintaining peace. Develop on the hints given below.

- Rising geopolitical tensions causing havoc
- Wars lead to human suffering, displacement, economic loss.
- Need for successful peace building initiatives
- Collective action needed — international cooperation, diplomacy, education, cultural exchange
- Need for disarmament and arms control

OR

B. Energy is at the heart of the climate challenge and a key to the solution. As Amita/Amit, the President of the Environment Club of your school, write a speech in about 120-150 words on the topic ‘Accelerating the transition to clean energy is the pathway to a healthy and livable life.’ You may take help from inputs given below.

- Fossil fuels are the largest contributors to global climate change.
- Current energy crisis has a great impact on the environment.
- Urgent need to end our reliance on fossil fuels and invest in alternative sources of energy that are clean, accessible, affordable, sustainable and reliable.
- Renewable energy sources (solar, wind, hydro) to be explored.
- Collective action — policy changes, community initiatives

(iv). Attempt ANY ONE of the two, in about 120-150 words.

(5)

A. While man's exploration of Space has opened up a universe of unlimited possibilities, it has also sparked a lively debate on Earth about the necessity and value of Space exploration. With issues like poverty, social injustices, climate change and other pressing concerns looming large in the present times, it may seem like exploring space is a misuse of our funding. While it is important to address these issues, solving these problems doesn't depend on defunding space programs. Write a debate in about 120-150 words either in favour or against the topic: 'Space exploration is a waste of money.' You may develop your case on the inputs given below.

Favour-

- Space exploration is costly, harsh and perilous.
- It gives us no direct benefit.
- Billions spent on running space stations can be used in the development of civilizations.
- Rather than exploring life on other planets, it would be better to make efforts to improve life on Earth.

Against-

- Scientific knowledge has value beyond the measurements of cost.
- Satellites and other space advancements have greatly benefited human life.
- Man must cater to his curiosity for constant development.
- It is important to know who we are and where we are in terms of the universe.

OR

B. Good academic achievement allows students to enhance and develop essential skills required for a successful life. But every person has a different vision for success in life. Can academic excellence alone define success. Write a debate in about 120-150 words either in favour or against the topic, 'Academic excellence is the only requirement for a successful career.' You may take help from the following inputs.

Favour-

- Excellent academic performance enhances the student learning landscape.
- It opens up gateways to various great opportunities in numerous sectors and organisations with good pay scales.
- Scoring well in an examination can help you get into your desired college or university.
- Good academic performance boosts self-esteem and confidence in students.
- Students get to develop important life skills such as leadership, time management, effective communication, logical thinking, problem-solving, and many more

Against-

- Every person has a different vision of success in life.
- Along with academics, having co-curricular knowledge and extra skills are required too.
- Success not only depends on student's calibre and potential but also determination.
- Several celebrities have a successful career without a sound academic background.
- One's attitude and willingness bring success in life.

SECTION – C (LITERATURE)

(31 Marks)

Typology	Literature	Recalling, reasoning, appreciating literary conventions, inference, analysis, creativity with fluency and critical thinking
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VI. Reference to the Context

(i) Read the given extract carefully and answer the questions that follow: (1x3=3 marks)

A. Silence surrounds us. I would have
Him prodigal, returning to
His father's house, the home he knew,
Rather than see him make and move
His world. I would forgive him too,
Shaping from sorrow a new love

i. Identify the poetic device used in line-2 of the given extract.

- a. Alliteration
- b. Allusion
- c. Transferred Epithet
- d. Personification

ii. Explain the purpose of the speaker wishing for the prodigal to return to his father's house.

iii. The phrase "Silence surrounds us" refers to _____ .

OR

B. And forever, by day and night, I give back life to my
own origin,
And make pure and beautify it;
(For song, issuing from its birth-place, after fulfilment,
wandering
Reck'd or unreck'd, duly with love returns.)

i. Identify the poetic device used in 'I give back life....'

- a. Metaphor
- b. Simile
- c. Personification
- d. Alliteration

ii. The phrase "make pure and beautify it" can be interpreted as _____.

iii. The stanza compares the journey of a song to that of rain. Highlight any one point of this comparison.

(ii) Read the given extract carefully and answer the questions that follow: (1x3=3 marks)

A. Water, Water, Everywhere. I could feel that the ship had water below, but I dared not abandon the wheel to investigate. Suddenly, the front hatch was thrown open and Mary appeared. "We're sinking!" she screamed. "The decks are smashed; we're full of water." "Take the wheel", I shouted as I scrambled for the hatch. Larry and Herb were pumping like madmen. Broken timbers hung at crazy angles, the whole starboard side bulged inwards; clothes, crockery, charts, tins and toys slogged about in deep water.

i. How does the tone in the description "Broken timbers hung at crazy angles" affect the reader's view of the situation?

- a) It lessens the perceived severity of the damage
- b) It highlights the chaotic and dire condition of the ship

- c) It gives a humorous impression of the situation
- d) It implies that the ship is being managed well

ii. The assertion “We’re sinking!” is based on the reasoning that:

- a) The speaker was occupied with steering the ship
- b) Larry and Herb were actively trying to pump out water
- c) The ship's structure was severely damaged and taking on water
- d) The ship's progress was significantly slowed down due to flooding

iii. The speaker's decision to not abandon the wheel suggests that they prioritised _____ over checking the damage below.

- a) Steering the ship to avert further damage
- b) Investigating the flooding
- c) Communicating with the crew
- d) Observing the surroundings

OR

B. The town had a couple of rudimentary general stores selling Chinese cigarettes, soap and other basic provisions, as well as the usual strings of prayer flags. In front of one, men gathered in the afternoon for a game of pool, the battered table looking supremely incongruous in the open air, while nearby women washed their long hair in the icy water of a narrow brook that babbled down past my guest house. Darchen felt relaxed and unhurried but, for me, it came with a significant drawback. There were no pilgrims.

i. The phrase “the battered table looking supremely incongruous in the open air” suggests that

- a) The table was new and out of place
- b) The table appeared strange and out of place
- c) The table fit perfectly in the environment
- d) The table was hardly noticeable in the surroundings

ii. The assertion “Darchen felt relaxed and unhurried” is based on the reasoning that

- a) There were many fast-paced activities in the town
- b) The town had a busy and bustling atmosphere
- c) The town had a laid-back and leisurely pace
- d) The town was crowded with tourists

iii. The town’s general stores selling Chinese cigarettes, soap, and other basic provisions indicate a _____ nature.

- a) Modern and well-stocked
- b) Basic and unpretentious
- c) Luxurious and abundant
- d) Diverse and exotic

(iii) Read the given extract carefully and answer the questions that follow: (1x4=4 marks)

A. ‘Won’t you sit down?’ asked the girl. She held open the door of the living-room and I went inside past her. I stopped, horrified. I was in a room I knew and did not know. I found myself in the midst of things I did want to see again but which oppressed me in the strange atmosphere. Or because of the tasteless way everything was arranged, because of the ugly furniture or the muggy smell that hung there, I don’t know; but I scarcely dared to look around me. The girl moved a chair. I sat down and stared at the woollen tablecloth. I rubbed it. My fingers grew warm from rubbing. I followed the lines of the pattern. Somewhere on the edge there should be a burn mark that had never been repaired.

i) The tone of the passage can best be described as:

- a) Cheerful
- b) Reflective
- c) Distressing
- d) Apathetic

ii) Identify the specific detail on the table-cloth that the speaker recalls and its significance.

iii) Statement-A: The speaker felt a mixture of familiarity and alienation in the room.

Statement-R: The oppressive atmosphere and tasteless arrangement contributed to the speaker's discomfort.

- a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is the incorrect explanation of A
- c) A is true but R is false
- d) A is false but R is true

iv) Find a word from the extract which conveys a meaning similar to 'subdued'

OR

B. CYRIL: Now you shouldn't have told him that, Mum.

That's not fair. You've hurt his feelings. Mine, too.

MRS PEARSON: Sometimes it does people good to have their feelings hurt.

The truth oughtn't to hurt anybody for long.

If your father didn't go to the club so often,

perhaps they'd stop laughing at him.

CYRIL: [gloomily] I doubt it.

i. Based on the extract, draw an inference about the relationship dynamics in the family.

ii. Statement A: Mrs. Pearson believes that facing the truth can be beneficial in the long run.

Statement R: She thinks avoiding the truth leads to more harm.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is NOT the correct explanation of A.
- c) Both A and R are false.
- d) A is true but R is false.

iii. The tone of Mrs. Pearson's remark, "The truth oughtn't to hurt anybody for long," suggests:

- a) Cynicism
- b) Straightforward
- c) Sarcasm
- d) Pessimism

iv. State the 'truth' that Mrs. Pearson refers to in the above extract.

VII. Answer the following questions in about 40-50 words each:

(2X3=6marks)

a. Comment on how the poet uses the imagery of the laburnum tree to convey the theme of transformation and renewal in 'The Laburnum Top'.

OR

Analyse how the poet's realization about the difference between appearance and reality contributes to the theme of growing up in 'Childhood'.

b) Evaluate the role of Howard Carter in the discovery and initial examination of King Tut's tomb.

OR

Discuss the experiences of Professor Gaitonde that made him realise his transition into the parallel universe. (The Adventure)

VIII. Answer ANY ONE of the following question in about 40-50 words: (1x3=3 marks)

a) Examine Aram's conflicting emotions on encountering Mourad with the horse and how this incident reflects the values of the Garoghlanian family. (The Summer of the Beautiful White Horse)

OR

b) Analyze George's initial response to Mrs. Pearson's transformation and what it reveals about his personality. (Mother's Day)

IX. Answer ANY ONE of the following question in about 120-150 words: (1x6=6 marks)

a) "Acceptance and resilience are the hallmarks of a strong character." Discuss with reference to the grandmother in 'The Portrait of a Lady', highlighting how she adapted to changes and maintained her dignity throughout her life.

OR

b) "The sea holiday was her past, mine is her laughter." Discuss the significance of the photograph in the poem, 'A photograph' and how it serves as a bridge between the past and the present for the speaker.

X. Answer ANY ONE of the following question in about 120-150 words: (1x6=6 marks)

a) "A melon has been crowned." Explore the role of the public in 'The Tale of Melon City' and discuss how the citizens' decisions and reactions drive the plot and its conclusion.

OR

b) Examine the dynamics between Dr. Andrew Manson and the Morgan family during the birth crisis. How do specific incidents illustrate the development of trust and emotional bonds between them?

ENGLISH CORE
Marking Scheme and Hints to Solutions

Note:

1. The marking scheme provides suggested value points and not the complete answers.
2. Any other relevant answer not given herein but given by the candidate be also suitably rewarded.

Q.No.	Value Points/Key	Marks allotted to each value point/Key point	Total Marks	
	SECTION-A (READING SKILLS) (26 MARKS)			
I.	A. i. d) The red fox, shies away from its daytime activity, often exhibiting increased nocturnal activity.	1	5	
	ii. c) Kindness, compassion and basic respect for the natural world.	1		
	iii. a) They continue to be used for labour in the timber and the travel and tourism industries.	1		
	iv. a) Both A and R are true and R is the correct explanation of A.	1		
	v. b) Subjecting animals to cruel training practices for entertainment business.	1		
	B. vi. It enforced a ban on using wild and protected animals-bears, monkeys, panthers, lions, and tigers-for entertainment, such as in circuses.	1	5	
		vii. Any service derived from such animals is made possible only through training practices grounded in deep cruelty/ Their muzzles are pierced with hot iron rods and threaded with thick ropes that, when tugged, make the animals jump and prance in pain. (Any one)		1
		viii. Reaching out to tourists and raising awareness of the suffering underpinning their holiday fun/Promoting sustainable travel through a community-partnership model.		1
		ix. Extended periods of isolation from their peers and societies coupled with cruel training practices can induce post-traumatic stress syndrome (PTSS) in wild elephants similar to humans like abnormal startle responses, depression, unpredictable social behaviour and aggression.		1
		x. divertissement		1
		1		
II.	A. i. c. hike in coffee prices	1	4	
	ii. a. endure the gloom	1		
	iii. b. Karnataka, Kerala, Tamil Nadu, Non-Traditional Areas, The Northeast	1		
	iv. c. A is true but R is false.	1		
	B. v. India is the world's fifth largest exporter of coffee, with exports of \$1.28 billion in 2023- 24.	1	4	
		vi. Cost of inputs and labour		1
		vii. To increase productivity		1
		viii. aficionado		1
	(A) Note Making		5	
	Title- Soulful Steps/ Groove to Heal/ Dance and Wellness (Any other suitable title)	1		

	Numbering and indenting	1	
	Key/glossary	1	
III.	Notes/Content	2	
	<ul style="list-style-type: none"> - Advantages of dancing <ul style="list-style-type: none"> o boosts health o manages symptoms of <ul style="list-style-type: none"> ▪ neurocognitive ▪ movement disorders - Therapeutic effects of dancing <ul style="list-style-type: none"> o <u>Park.</u> Disease o MS o Alzheimer o Dementia & brain injury - Weekly dance training helps <ul style="list-style-type: none"> o regain balance & coordination o flexibility o creativity & memory <ul style="list-style-type: none"> ▪ improves <u>Park.</u> - Dance v/s brisk walk/aerobic exercises <ul style="list-style-type: none"> o Dance requires <ul style="list-style-type: none"> ▪ Intricate mental multitasking ▪ <u>engt</u> of various parts of brain o strengthens & improves <ul style="list-style-type: none"> ▪ <u>NC</u> ▪ Mobility - <u>+ve</u> effects of dancing <ul style="list-style-type: none"> o Improves real world behaviour <ul style="list-style-type: none"> ▪ Acceptance of their bodies ▪ Able to combat loneliness o Ultimate aim <ul style="list-style-type: none"> ▪ Happiness of <u>ppl.</u> ▪ Involvement in comm. 		
	Key to Abbreviations:	1	
	<ul style="list-style-type: none"> - Parkinson – Park. - Neural connections – NC - Engagement – Engt - Community – Comm. - People – Ppl. 		
	(B) Summary:		3
	The summary should include all the important points given in the notes.		
	Content	2	
	Expression	1	

SECTION – B (GRAMMAR & CREATIVE WRITING SKILLS) (23 Marks)			
IV.	<p>i)</p> <ul style="list-style-type: none"> - climbed - began - continues - have travelled - holds <p>(Attempt any four)</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	4
	<p>ii)</p> <ul style="list-style-type: none"> - I was considered a rebel (by them). - Reena said that she had not eaten breakfast. - I have not been well since I returned from the picnic. 	<p>1</p> <p>1</p> <p>1</p>	3
V.	<p>i) Advertisement (Classified)</p> <p>A. Format: The format should include: Box, Heading, Contact details Content Expression Value Points:</p> <p>Heading - TO LET</p> <ul style="list-style-type: none"> - Mention type of accommodation (PG) - Mention location - List facilities - Specify rent - State preferences (if any) - Mention contact details - Any other relevant detail <p style="text-align: center;">OR</p> <p>B. Format: The format should include: Box, Heading, Contact details Content Expression Value Points:</p> <p>Heading - PROPERTY</p> <ul style="list-style-type: none"> - Mention type of property (plot) - Provide estimated size - Give location preferences - Specify budget - Mention contact details - Any other relevant detail 	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	3
	<p>ii) Poster</p>		3

<p>A. Format: The format should include: Box, Heading/s, details of issuing authority</p> <p>Content Expression Value points:</p> <ul style="list-style-type: none"> - Relevant anti - bullying slogan - Physical and psychological impacts of bullying - Steps to combat the issue - Illustration - Issuing authority - Any other relevant detail 	<p>1 1 1</p>	
OR		
<p>B. Format: The format should include: Box, Heading/s, details of issuing authority</p> <p>Content Expression Value points:</p> <ul style="list-style-type: none"> - Relevant slogan highlighting benefits of Yoga - Health benefits (physical & mental/psychological) - Illustration - Issuing authority - Any other relevant detail 	<p>1 1 1</p>	
<p>iii) Speech</p>		5
<p>A. Format- salutation, introduction of self and topic</p> <p>Content Expression</p> <ul style="list-style-type: none"> - Grammatical accuracy, appropriate words, spellings - Coherence and relevance of ideas and style. <p>Value points:</p> <ul style="list-style-type: none"> - Rising geopolitical tensions causing havoc - Wars lead to human suffering, displacement, economic loss. - Need for successful peace building initiatives - Collective action needed - international cooperation, diplomacy, education, cultural exchange - Need for disarmament and arms control - Any other relevant point 	<p>1 2 2</p>	
<p>B. Format- salutation, introduction of self and topic</p> <p>Content Expression</p> <ul style="list-style-type: none"> - Grammatical accuracy, appropriate words, spellings - Coherence and relevance of ideas and style. <p>Value points:</p>	<p>1 2 2</p>	

<ul style="list-style-type: none"> - Fossil fuels are the largest contributors to global climate change. - Current energy crisis has a great impact on the environment. - Urgent need to end our reliance on fossil fuels and invest in alternative sources of energy that are clean, accessible, affordable, sustainable and reliable. - Renewable energy sources (solar, wind, hydro) to be explored. - Collective action - policy changes, community initiatives - Any other relevant point 		
iv) Debate		5
A. Format- salutation, specification whether in favour or against, introduction of self and topic	1	
Content	2	
Expression <ul style="list-style-type: none"> - Grammatical accuracy, appropriate words, spellings - Coherence and relevance of ideas and style. 	2	
Value points:		
Favour-		
<ul style="list-style-type: none"> - Space exploration is costly, harsh and perilous. - It gives us no direct benefit. - Billions spent on running space stations can be used in the development of civilizations. - Rather than exploring life on other planets, it would be better to make efforts to improve life on Earth. - Any other relevant point 		
Against-		
<ul style="list-style-type: none"> - Scientific knowledge has value beyond the measurements of cost. - Satellites and other space advancements have greatly benefited human life. - Man must cater to his curiosity for constant development. - It is important to know who we are and where we are in terms of the universe. - Any other relevant point 		
OR		
B. Format- salutation, specification whether in favour or against, introduction of self and topic	1	
Content	2	
Expression <ul style="list-style-type: none"> - Grammatical accuracy, appropriate words, spellings - Coherence and relevance of ideas and style. 	2	

VI.	<p>Value points:</p> <p>FAVOUR</p> <ul style="list-style-type: none"> - Excellent academic performance enhances the student learning landscape. - It opens up gateways to various opportunities in numerous sectors and organisations with good pay scales. - Scoring well in an examination can help students get into desired college or university. - Good academic performance boosts self-esteem and confidence in students. - Students get to develop important life skills such as leadership, time management, effective communication, logical thinking, problem-solving, and many more. - Any other relevant point <p>AGAINST</p> <ul style="list-style-type: none"> - Every person has a different vision of success in life. - Along with academics, co-curricular knowledge and extra skills are required. - Success not only depends on student's calibre and potential but also determination. - Several celebrities have a successful career without a sound academic background. - One's attitude and willingness bring success in life. - Any other relevant point <p style="text-align: center;">SECTION C (LITERATURE) (31 Marks)</p> <p>Reference to the Context</p> <p>(i)</p> <p>A. i. b. Allusion 1</p> <p>ii. The speaker wishes for the prodigal to return to his father's house to reconnect with his roots and find forgiveness and acceptance, rather than venturing into the unknown and creating his own world 1</p> <p>iii. Void/indifference in relationship/lack of communication 1</p> <p style="text-align: center;">OR</p> <p>B. i. c. Personification 1</p> <p>ii. The act of cleansing and enhancing the origin 1</p> <p>iii. Just as rain originates from clouds, falls to the earth, and eventually returns to the atmosphere in a cycle, the song originates from its birthplace, fulfills its purpose by wandering, and then returns to its origin with love in the form of appreciation, completing its cyclic journey. 1</p> <p>(ii)</p> <p>A. i. b) It highlights the chaotic and dire condition of the ship 1</p> <p>ii. c) The ship's structure was severely damaged and taking on water 1</p> <p>iii. a) Steering the ship to avert further damage 1</p> <p style="text-align: center;">OR</p>		<p style="text-align: center;">3</p> <p style="text-align: center;">3</p>
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	<p>B. i. b) The table appeared strange and out of place ii. c) The town had a laid-back and leisurely pace iii. b) Basic and unpretentious</p> <p>(iii) A. i. c) Distressing ii. The speaker recalls a burn mark on the edge of the table-cloth. This detail is significant as it symbolises an unresolved past or a lingering memory. iii. a) Both A and R are true and R is the correct explanation of A. iv. oppressed</p> <p style="text-align: center;">OR</p> <p>B. i. The extract suggests that the family relationship dynamics are strained and involve a lack of effective communication and mutual respect. ii. (a) Both A and R are true and R is the correct explanation of A iii. (b) Straightforward iv. Mrs. Pearson refers to the truth that Cyril's father's frequent visits to the club make him a laughing stock.</p>	<p>1 1 1 1 1 1 1 1</p>	<p>4</p>
VII.	<p>Answer the following questions in about 40-50 words each:</p> <p>a)</p> <ul style="list-style-type: none"> - laburnum tree initially silent and still - represents/symbolises dormancy. - arrival of the goldfinch brings energy and transformation - tree transforms into a lively and dynamic entity - theme of renewal and cyclical nature of life emphasized. - (Any two relevant points) <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> - complexity and ambiguity of adult life compared to the simplicity of childhood. - hypocrisy/pretentiousness of adults observed by the child - realization of moral ambiguities - (Any two relevant points) <p>b)</p> <ul style="list-style-type: none"> - discovered King Tut's tomb in 1922- significant archaeological finding - meticulous documentation and examination of tomb's contents - provided invaluable information about ancient Egyptian burial practices and artifacts - (Any two relevant points) <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> - notices significant historical differences 	<p>Content-2 Expression- 1</p> <p>Content-2 Expression- 1</p> <p>Content-2 Expression- 1</p> <p>Content-2</p>	<p>2x3=6</p> <p>3</p> <p>3</p> <p>3</p>

VIII.	<ul style="list-style-type: none"> - experience in Jijamata Express - carriages carried letters GBMR/Union Jack - imposing building of East India House Headquarters - prominent British banks and stores on Hornby Road - (Any two relevant points) <p>Answer the following questions in about 40-50 words each:</p> <p>a)</p> <ul style="list-style-type: none"> - Aram feels both excitement and fear - struggles between the temptation to ride the horse and the disbelief that Mourad could have stolen it. - internal conflict underscores the Garoghlanian family's deep-seated values of honesty and integrity - 11 centuries reputation of being honest and trustworthy - finds it hard to reconcile with the situation. - (Any two relevant points) <p style="text-align: center;">OR</p> <p>b)</p> <ul style="list-style-type: none"> - shocked to see his wife smoking and drinking - admits he doesn't like changes/surprises - unhappy that his tea wasn't prepared which he didn't even want - hurt by the revelation that his friends at the club mock him behind his back - appears to be a pompous and chauvinistic man - (Any two relevant points) 	Expression- 1	1x3=3
IX.	<p>Answer the following question in about 120-150 words:</p> <p>a)</p> <ul style="list-style-type: none"> - gracefully adapts to the changes in her life - shifted from the village to the city - accepted the changes without complaints - started feeding sparrows - dealt with the seclusion- when grandson shifted abroad - unwavering faith and daily routine, reflects her strength - maintained her dignity and found solace in her spirituality. - (Any three relevant points) <p style="text-align: center;">OR</p> <p>b)</p> <ul style="list-style-type: none"> - Visual connection: The photograph provides a visual link to the past, allowing the poet to connect with her mother who is no longer alive. - Memory trigger: The photograph triggers memories of the past, allowing the poet to recall moments and emotions associated with her mother. - Emotional connection: It evokes emotions and 	Content-2 Expression- 1	3
		Content-2 Expression- 1	3
		Content-3 Expression- 3	1x6=6
		Content-3 Expression- 3	6
		Content-3 Expression- 3	6

<p>X.</p>	<p>sentiments, creating a sense of continuity between past and present.</p> <ul style="list-style-type: none"> - Nostalgia: It evokes nostalgia, a bitter-sweet longing for the past, which bridges the gap between then and now. - (Any three relevant points) <p>Answer the following question in about 120-150 words:</p> <p>a)</p> <ul style="list-style-type: none"> - demand justice for the accident caused by the archway, prompting a series of absurd legal proceedings. - passive acceptance of the king's arbitrary rulings, even leading to his own execution, shows their reliance on authority. - compliance is highlighted when they agree to crown a melon as their new ruler, fulfilling the king's decree. - decision reflects their desire for peace over rational governance (Laissez Faire) - satirical representation of passive citizenship and the absurdity of blindly following orders without critical thought. - (Any three relevant points) <p style="text-align: center;">OR</p> <p>b)</p> <ul style="list-style-type: none"> - Initially, the Morgans were anxious and desperate - unwavering efforts and calm reassurances foster a deeper trust. - specific events such as tireless attempts at resuscitating the baby and his empathetic support for Susan Morgan, illustrate the development of emotional bonds - professionalism and composure under intense pressure strengthened the Morgan family's confidence in his abilities. - baby came to life solidifying trust and gratitude - critical role of empathy, dedication, and competence - (Any three relevant points) 	<p>Content-3 Expression- 3</p> <p>Content-3 Expression- 3</p>	<p>1x6=6</p> <p>6</p> <p>6</p>
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CLASS: XI

SESSION: 2024-25

DAV SAMPLE QUESTION PAPER

SUBJECT: PHYSICS (THEORY)

Maximum Marks: 70

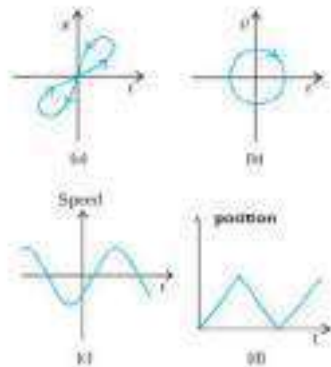
Time Allowed: 3 hours.

General Instructions:

- (1) There are 33 questions in all. All questions are compulsory.
- (2) This question paper has five sections: Section A, Section B, Section C, Section D and Section E. All the sections are compulsory.
- (3) **Section A** contains sixteen questions, twelve MCQ and four Assertion Reasoning based of 1 mark each, **Section B** contains five questions of two marks each, **Section C** contains seven questions of three marks each, **Section D** contains two case study based questions of four marks each and **Section E** contains three long answer questions of five marks each.
- (4) There is no overall choice. However, an internal choice has been provided in one question in Section B, one question in Section C, one question in each CBQ in Section D and all three questions in Section E. You have to attempt only one of the choices in such questions.
- (5) Use of calculator is not allowed.

SECTION A

1. The number of significant figures in 6.8000kg is
 - (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
2. A student plots the graphs related to motion of four objects as given in figures. Which figure/figures cannot possible represent one dimensional motion?



- (a) Figure a only
- (b) Figure b only
- (c) Figure d only
- (d) Figures (a), (b) and (c)

3. Study the following statements (For a particle moving along straight line)
- (i) \mathbf{F} may be along \mathbf{v}
 - (ii) \mathbf{F} may be opposite \mathbf{v}
 - (iii) \mathbf{F} may be normal to \mathbf{v}
 - (iv) \mathbf{F} may be at an angle to \mathbf{v}

Force is parallel to acceleration in

- (a) (i) and (ii) only
- (b) (i),(ii) and (iii) only
- (c) (ii) and (iv) only
- (d) (i),(ii),(iii) and (iv)

4. Which of the following equations does not represent the position of an object moving in a plane with a non-zero constant acceleration?

- (a) $\mathbf{r}_1 = 1.0 t \hat{i} + 3 t^2 \hat{j}$
- (b) $\mathbf{r}_2 = (5.0 + 3.0t)\hat{i} + 5 t^2 \hat{j}$
- (c) $\mathbf{r}_3 = 5 t \hat{j}$
- (d) $\mathbf{r}_1 = 3.0 t^2 \hat{i} - 4 t^3 \hat{j}$

5. A ball of 1 kg is projected under gravity from origin in x-y plane with a velocity $\mathbf{v} = (30\hat{i} + 40\hat{j})$ m/s. The power delivered to the ball by the gravitational force at $t = 7$ s is ($g = 10 \text{m/s}^2$)

- (a) +400W
- (b) -400W
- (c) -300W
- (d) +300W

6. The moment of inertia of a solid sphere of radius (R) and mass (M) about its diameter is

- (a) $MR^2/4$
- (b) $2MR^2/5$
- (c) $MR^2/2$
- (d) MR^2

7. Two satellites S_1 and S_2 are orbiting at a distance of $2R$ and $3R$ from the centre of the Earth, where R is the radius of the Earth. If the time period of their revolution are T_1 and T_2 respectively, then $(T_1/T_2)^{2/3}$ is

- (a) $4/3$
- (b) $3/4$
- (c) $2/3$
- (d) $3/2$

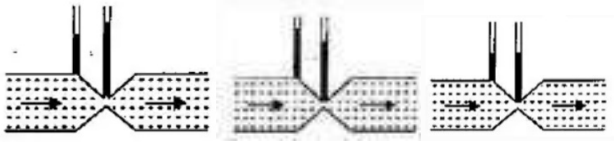
8. A source supplies heat to a system at the rate of 200 J/s. The system performs work at the rate of 80J/s. The internal energy of the system increases at the rate of

- (a) 80 J/s

- (b) 120 J/s
- (c) 200 J/s
- (d) 280 J/s

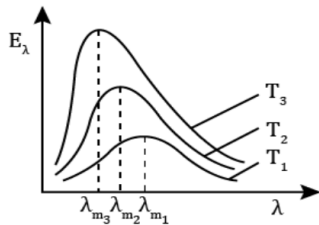
9. Figures A, B and C show study of flow of a non-viscous liquid. The correct figure is

- (A) (B) (C)



- (a) A only
- (b) B only
- (c) C only
- (d) B and C both

10. The graph shows variation of radiation energy emitted per unit area per unit wavelength by three black bodies at absolute temperatures T_1 , T_2 and T_3 . The relation between T_1 , T_2 and T_3 is



- (a) $T_1 > T_2 > T_3$
- (b) $T_1 < T_2 < T_3$
- (c) $T_1 > T_2 < T_3$
- (d) $T_1 < T_2 > T_3$

11. The displacement of a particle oscillating in simple harmonic motion is given by

$$X = 5\sqrt{2} \sin(2\pi t + \pi/4) \text{ m}$$

The speed of the body at $t = 1 \text{ s}$

- (a) $2\sqrt{2} \text{ m/s}$
- (b) $5\sqrt{2} \text{ m/s}$
- (c) $8\sqrt{2} \text{ m/s}$
- (d) $10\sqrt{2} \text{ m/s}$

12. A travelling wave is represented by

$$Y(x,t) = a \sin(kx - \omega t)$$

Is incident on a rigid boundary. Which of the following equations represents the reflected wave from the rigid boundary

- (a) $Y_1(x,t) = a \sin (kx+wt)$
- (b) $Y_2(x,t) = -a \sin (kx - wt)$
- (c) $Y_3(x,t) = a \sin (kx -wt)$
- (d) $Y_4(x,t) = -a \sin (kx+wt)$

For Questions 13 to 16, two statements are given- one labelled assertion (A) and other labelled reason (R). Select the correct answer to these questions from the options as given below.

- a) If both assertion and reason are true and reason is correct explanation of assertion.
- b) If both assertion and reason are true and reason is not the correct explanation of assertion.
- c) If assertion is true but reason is false.
- d) If both assertion and reason are false.

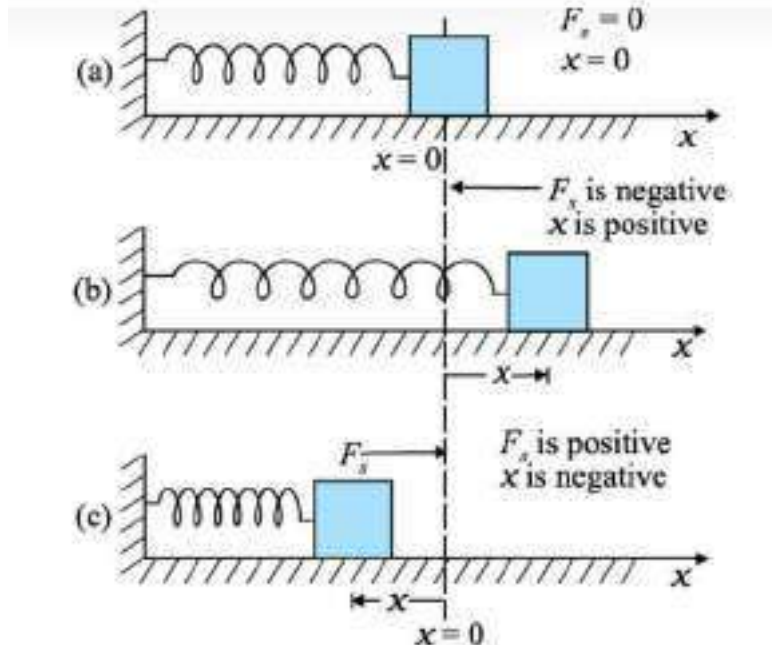
13. **Assertion (A):**Two bodies at different temperatures T_1 and T_2 , when brought in thermal contact do not necessarily settle to same temperature $(T_1+T_2)/2$

Reason (R):Two bodies may have different thermal capacities

14. **Assertion (A):**The speed of sound in a gas is not affected by change in pressure at constant temperature

Reason (R):The speed of sound in gas is given as $v=\sqrt{\gamma P / \rho}$

15. **Assertion (A):**In case (b) and (c) both springs possess same potential energy



Reason (R):Work done against restoring force is stored as Potential energy

16. Assertion (A):Amrit Singh , world renowned cyclist is always seen bending inwards while negotiating a curve during a race which won him many laurels

Reason (R):By bending , he lowers his centre of gravity

SECTION- B

17. The rate of flow (V) of a liquid through a pipe of radius 'r' under a pressure gradient $\frac{P}{l}$

is given by the formula $V = \frac{\pi pr^4}{8\eta l}$,where η is the coefficient of viscosity. Check the dimensional correctness of the above relation.

18. A block of mass m kg, initially at rest, breaks into two parts of masses in the ratio 2:3. The velocity of smaller part is $(8\hat{i} + 6\hat{j})$ m/s. Find the velocity of the bigger part.

19. An object projected under gravity is found to have the same range 'R' for two angles of projection. If t_1 and t_2 be the time of flight in the two cases, then find the relation between t_1, t_2 and R.

OR

The sum and the difference of two vectors **A**&**B** are perpendicular to each other. Prove that the vectors are equal in magnitude.

20. Two rods A and B made of different materials are of equal length L. Each rod has the ends at temperature T_1 and T_2 where $T_1 > T_2$. Find the condition that will ensure equal rates of flow of heat through the rods A and B.

21. A Capillary tube of diameter 2 mm is dipped in water in a beaker to a depth so that the pressure at the lower end of tube is 1.0×10^5 Pa. Calculate the pressure in the tube in order to blow a hemispherical bubble at its end in water. The surface tension of water at temperature of the experiments is 7.30×10^{-2} N/m.

SECTION -C

22. Justify the following statements:

(a) In a sound wave, a displacement node is a pressure anti- node and vice-versa

(b) A violin-note and sitar-note may have the same frequency, yet we can distinguish between the two notes

(c) Solids can support both longitudinal and transverse waves but in gases only longitudinal waves can propagate in gases.

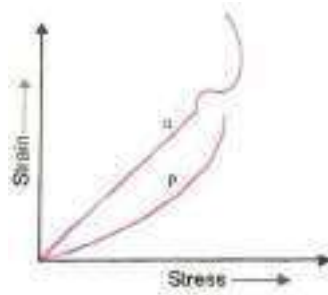
23. An insect trapped in a circular groove of radius 10cm moves along the groove of radius 10cm moves along the groove steadily and completes 7 revolutions in 44s.

(a) What is the angular speed of insect's motion?

(b) Is the acceleration vector a constant vector?

(c) Calculate the magnitude of acceleration.

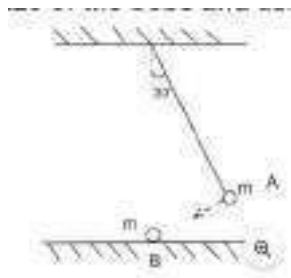
24. In plotting strain-stress graph for two material P and Q, a student by mistake puts strain on y-axis and stress on x-axis as shown in figure. Answer the following questions based on the given graph



- Which material amongst the two is more ductile? Justify
- Young's modulus of which of the two material is higher? Explain
- Which of the two given material has higher tensile strength? Explain

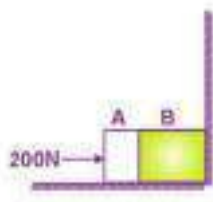
25. State Kepler's law of area for planetary motion. Show that it is the consequence of law of conservation of angular momentum

26. A bob A of a pendulum of length 2m is released from 30° to the vertical hits another bob B of same mass at rest on a table as shown in figure. How high does the bob A rise after collision? Justify. Calculate the velocity with which the bob B moves after collision? Neglect the size of the bobs and assume the collision to be elastic.



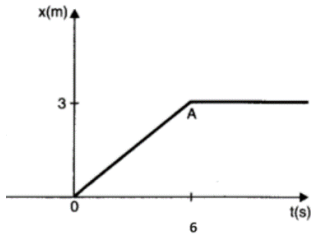
27. Torques of equal magnitude are applied to a hollow cylinder and a solid sphere both having the same mass and radius. The cylinder is rotating about its axis and sphere is rotating about its diameter passing through centre. Find the ratio of the angular speed of cylinder to that of solid sphere after a given time.

28. Two bodies A and B of masses 5kg and 10kg in contact with each other rest on a table against a rigid wall as shown in figure. The coefficient of friction between the bodies and the table is 0.15. A force of 200N is applied horizontally to A. What is (a) the reaction of partition (b) the action-reaction forces between A and B? What happens when the wall is removed?



OR

The following figure shows the position-time graph of a particle of mass 8kg. What is the



- (a) Force on a particle for $t < 0$, $t > 6$, $0 < t < 6$ s?
(b) Impulse at $t = 0$ and $t = 6$ s (considering 1-d motion only.)

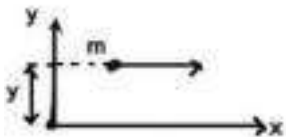
SECTION D

Case Study Based Questions

29. Read the following paragraph and answer the questions that follow.

The moment of a force also referred as Torque, is a rotational analogue of the force in linear motion. The quantity angular momentum is the rotational analogue of linear momentum. Like the moment of force, angular momentum is also a vector product. It could also be referred to as moment of momentum. From this term one could guess how angular momentum is defined.

- (i) A force $\mathbf{F} = F_0 \hat{j}$ is acting on a particle moving in x-y plane. The torque acting on the particle when it is at $\mathbf{r} = x_0 \hat{i} + y_0 \hat{j}$ will be
(a) $x_0 f_0 \hat{k}$
(b) $-x_0 f_0 \hat{k}$
(c) $x_0 f_0 \hat{j}$
(d) $-x_0 f_0 \hat{j}$
- (ii) A point mass is moving with a constant velocity along a line parallel to the x-axis away from the origin. Its angular momentum with respect to origin



- (a) is zero

- (b) remains constant
- (c) goes on increasing
- (d) goes on decreasing

(iii) A particle performs uniform circular motion with angular momentum L . If the angular frequency ω of the particle is doubled and kinetic energy K is halved, its angular momentum becomes

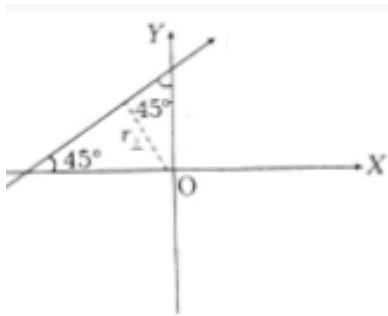
- (a) $4L$
- (b) $2L$
- (c) $L/2$
- (d) $L/4$

OR

If rotational kinetic energies of two bodies having moments of inertia of 9kg/m^2 and 1kg/m^2 are the same then ratio of their angular momentum is

- (a) 9:1
- (b) 1:9
- (c) 1:3
- (d) 3:1

(iv) An object of mass $m=0.6\text{kg}$ is moving with a uniform speed $v=(5\hat{i}+5\hat{j})\text{ m/s}$ in XY plane along a straight line as shown in figure



The magnitude of the angular momentum of the object at point P

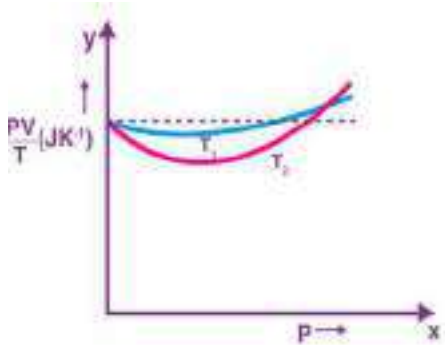
- (a) $30\text{kgm}^2\text{s}^{-1}$
- (b) $24\text{kgm}^2\text{s}^{-1}$
- (c) $12\text{kgm}^2\text{s}^{-1}$
- (d) $15\text{kgm}^2\text{s}^{-1}$

30. Read the following paragraph and answer the questions that follow.

A perfect gas equation can be written as $PV=nRT$

Where n is the number of moles and $R= N_A k_b$ is a universal constant. The temperature T is absolute temperature. Molecules of such gas are free from intermolecular attraction and have negligible volume. The gas particles are equally sized and motion of the particle follows Newton's laws of

motion. These particles do not undergo any energy loss as they have perfect elastic collision. Figure shows the plot of $\frac{PV}{T}$ versus P for one mole of oxygen gas at two different temperatures. (Given molecular mass of oxygen=32 unit).



- (i) A real gas will behave like an ideal gas at
- (a) high temperature (b) low temperature
- (c) high temperature and low pressure (d) low temperature and high pressure
- (ii) In the above diagram what does the dotted line signify?
- (a) Ideal gas behaviour (b) Real gas behaviour
- (c) Oxygen gas at temperature T_1 (d) Oxygen gas at temperature T_2
- (iii) Which of the following is correct?
- (a) $T_1 < T_2$ (b) $T_1 > T_2$
- (c) $T_1 = T_2$ (d) $T_1 \geq T_2$

OR

- (iii) The value of $\frac{PV}{T}$ where curves meet on y-axis is
- (a) 8.31 J/K (b) 0.26 J/K
- (c) 0.52 J/K (d) 4.15 J/K
- (iv) Relation between Boltzmann constant and universal gas constant
- (a) $R = k_b N$ (b) $N = k_b R$
- (c) $R = k_b / N$ (d) $k_b = NR$

SECTION E

31. (a) Derive an expression for work done during an adiabatic expansion of gas
- (b) 2.2 moles of an ideal monoatomic gas occupying volume V at temperature 300K is adiabatically expanded to a volume of $2\sqrt{2} V$. Find
- Final temperature
 - Change in internal energy (Where $R=8.31 \text{ J/K/mol}$), of the gas

OR

- (a) If n number of little droplets of water of surface tension S , all of the same radius r combine to form a single drop of radius R . Suppose the entire energy released is converted into K.E. of the single drop, then find the velocity acquired by it?
- (b) A plane is in level flight at constant speed and each of the wings has an area of 25m^2 . If the speed of the air is 180km/h over the lower wing and 234km/h over the upper wing surface. Determine mass of the plane. (Take air density to be 1kg/m^3)

32. A progressive wave represented by

$$Y(x,t) = a \sin(kx - \omega t)$$

is incident on a closed organ pipe. After its reflection from the closed end a standing wave is formed in the pipe.

- Derive an expression for resultant displacement of standing waves.
- Find the frequency of n^{th} mode of vibration
- Show that only odd harmonics are present in closed organ pipe.

OR

Consider a particle of mass m executing S.H.M. with amplitude ' a ' and constant angular frequency ω . The displacement ' y ' of the particle at ' t ' seconds after starting from mean position is given by

$$Y = a \sin \omega t$$

Derive the expression for the kinetic and potential energies of the particle at time t . Hence plot a graph to show the variation of K.E. and P.E. of the particle with displacement

33. A ball is dropped from a height of 100m on a floor. At each collision with the floor the ball loses one tenth of its speed. Plot speed- time graph of its motion between $t=0$ to $t=9\text{s}$. (take $g=10\text{m/s}^2$)

OR

A man is standing on the top of a building 100m high. He throws two balls vertically upwards, one at $t=0$ with velocity $2u$ and other at $t=T_s$ (less than 2 seconds) with a velocity u . At $t=2\text{s}$, the vertical gap between first and second ball is found to be 15m. The gap is found to remain constant. Calculate the value of u and T . (given $g=10\text{m/s}^2$)

Class XI (2024-25)

PHYSICS

SAMPLE PAPER MARKING SCHEME

Q.No.	Hints to the Answers	Value Point	Total Marks
SECTION A			
1	d) 5	1	1
2	d) Figures A, B and C	1	1
3	d) in all options (A, B, C and D)	1	1
4	d) $\vec{r}_4 = 3.0 t \hat{i} - 4.0t^3 \hat{j}$	1	1
5	c) - 300 W	1	1
6	b) $\frac{2MR^2}{5}$	1	1
7	c) $\frac{2}{3}$	1	1
8	b) 120 J/s	1	1
9	b) B only	1	1
10	b) $T_1 < T_2 < T_3$	1	1
11	d) + 10 π m/s	1	1
12	d) $y_4(x,t) = -a \sin(kx + \omega t)$	1	1
13	Option (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion	1	1
14	Option : (C) Assertion is true but Reason is false	1	1
15	Option (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion	1	1
16	Option : (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertions	1	1
SECTION B			
17	<p>L.H.S. = $V = [L^3 T^{-1}]$</p> <p>R.H.S. = $\frac{\pi \rho r^4}{8 \eta l}$</p> <p>= $\frac{[M^1 L^{-1} T^{-2}] [L]^4}{[M^1 L^{-1} T^{-1}] [L]^1}$</p> <p>= $[M^0 L^3 T^{-1}]$</p> <p>As LHS = RHS, dimensionally \therefore The relation is correct</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	2
18	<p>Let after breaking, masses of two parts are $m_1 = \frac{2}{5}m$ and $m_2 = \frac{3}{5}m$</p> <p>Acc. to law of conservation of linear momentum $m(0) = m_1 \vec{v}_1 + m_2 \vec{v}_2$</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	2

	$\therefore \frac{2}{5}m(8\hat{i} + 6\hat{j}) + \frac{3}{5}m\vec{v}_2 = 0$ $16\hat{i} + 12\hat{j} + 3\vec{v}_2 = 0$ $\vec{v}_2 = \left(-\frac{16}{3}\hat{i} - 4\hat{j}\right) \text{ m/s}$	1/2	
19	<p>A projectile will have same horizontal range R for two angles of projection θ and $(90^\circ - \theta)$.</p> $R = \frac{u^2 \sin 2\theta}{g}$ $t_1 = \frac{2u \sin \theta}{g}, t_2 = \frac{2u \cos \theta}{g}$ $t_1 t_2 = \left(\frac{2u \sin \theta}{g}\right) \left(\frac{2u \cos \theta}{g}\right)$ $t_1 t_2 = \frac{2u^2 \sin 2\theta}{g^2}$ $t_1 t_2 = \frac{2R}{g}$ <p style="text-align: center;">OR</p> <p>$(\vec{A} + \vec{B})$ and $(\vec{A} - \vec{B})$ are perpendicular to each so their dot product is Zero</p> $(\vec{A} + \vec{B}) \cdot (\vec{A} - \vec{B}) = 0$ $\vec{A} \cdot \vec{A} - \vec{A} \cdot \vec{B} + \vec{B} \cdot \vec{A} - \vec{B} \cdot \vec{B} = 0$ $A^2 - \vec{A} \cdot \vec{B} + \vec{A} \cdot \vec{B} - B^2 = 0$ $A^2 - B^2 = 0$ $A^2 = B^2$ $\therefore A = B$	1/2 1/2 1/2 1/2 1/2 1/2 1/2	2 2
20	$\frac{\Delta Q}{\Delta t} = KA \frac{\Delta T}{\Delta x}$ $As, \frac{\Delta Q_1}{\Delta t} = \frac{\Delta Q_2}{\Delta t}$ $K_1 A_1 \frac{(T_1 - T_2)}{L} = \frac{K_2 A_2 (T_1 - T_2)}{L}$ $\therefore \frac{A_1}{A_2} = \frac{K_2}{K_1}$	1/2 1/2 1/2 1/2	2
21	<p>Pressure required to blow a hemispherical bubble at its end in water = $P_{\text{outside}} + \frac{2S}{R}$</p> $= 1.0 \times 10^5 + \frac{2 \times 7.30 \times 10^{-2}}{1 \times 10^{-3}}$ $= 10^5 + 14.6 \times 10^1$ $= 10^5 + 0.00146 \times 10^5$ $= 1.00146 \times 10^5 \text{ Pa}$	1/2 1/2 1/2 1/2	2

SECTION C			
22	<p>a) Node (N) is a point, where the amplitude of oscillation is zero and pressure is maximum i.e. antinode.</p> <p>Antinode (A) is a point where the amplitude of oscillation is maximum and pressure is minimum, hence node.</p> <p>b) Though the violin and sitar note have the same frequency, yet the overtones produced and their relative strengths are different in the two notes.</p> <p>c) Solids have both, the elasticity of volume and elasticity of shape, whereas gases have only the elasticity of volume.</p>	<p>½</p> <p>½</p> <p>1</p> <p>1</p>	<p>1</p> <p>1</p> <p>1 =03</p>
23	<p>a) $\omega = \frac{2\pi}{T}$ $= 2 \times \frac{22}{7} \times \frac{7}{44}$ $= 1 \text{ rad/s}$</p> <p>b) Since, direction of velocity changes continuously acceleration is not a constant vector.</p> <p>c) $a = \omega^2 R$ $= (1)^2 \times (10 \text{ cm})$ $= 10 \text{ cm s}^{-2}$</p>	<p>½</p> <p>½</p> <p>1</p> <p>½</p> <p>½</p>	<p>1</p> <p>1</p> <p>1 = 03</p>
24	<p>a) The deformation between elastic limit and fracture point for material (Q) is more as compared to material (P). Hence (Q) is more ductile.</p> <p>b) $Y = \frac{\text{stress}}{\text{strain}}$ Slope of graph = $\frac{1}{Y}$</p> <p>(slope)_P < (slope)_Q $\therefore Y_P > Y_Q$</p> <p>c) Material (Q) has higher tensile strength as it sustains more stress after elastic limit.</p>	<p>1</p> <p>½</p> <p>½</p> <p>1</p>	<p>1</p> <p>1</p> <p>1 =03</p>
25	<p>Law of areas- The radius vector drawn from the sun to a planet sweeps out equal areas in equal intervals of time, i.e., the areal velocity (area covered per unit time) of a planet around the sun is constant.</p> <p>Consider a planet moving in an elliptical orbit with the sun at focus S. Let \vec{r} be the position vector of the planet w.r.t the sun and \vec{F} be the gravitational force on the planet due to the sun. Torque exerted on the planet by this force about the sun is $\vec{\tau} = \vec{r} \times \vec{f} = 0$ (As \vec{r} & \vec{f} are oppositely directed)</p> <div style="text-align: center;"> </div> <p>But $\vec{\tau} = \frac{d\vec{L}}{dt}$</p>		<p>3</p>

$$\therefore \frac{d\vec{L}}{dt} = 0 \text{ or } \vec{L} = \text{constant}$$

Suppose the planet moves from position P to P' in time Δt . The area swept by the radius vector \vec{r} is $\Delta\vec{A} = \frac{1}{2} \vec{r} \times \overrightarrow{PP'}$

$$\text{But } \overrightarrow{PP'} = \Delta\vec{r} = \vec{v}\Delta t = \frac{\vec{p}}{m} \Delta t$$

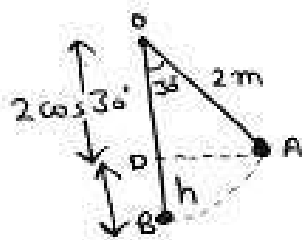
$$= \Delta\vec{A} = \frac{1}{2} \vec{r} \times \frac{\vec{p}}{m} \Delta t$$

$$= \frac{\Delta\vec{A}}{\Delta t} = \frac{1}{2m} (\vec{r} \times \vec{p}) = \frac{\vec{L}}{2m}$$

or $\frac{\Delta A}{\Delta t} = \text{constant}$ (As \vec{l} and \vec{m} are constant)

26

Ball A will not rise after collision. When two bodies of same mass undergo an elastic collision, their velocities are interchanged. After collision, ball A will come to rest and the ball B would move with the velocity of A.



$$\text{Height } BD = OB - OD = 2 - 2\cos 30^\circ$$

$$= 2 - 2(\sqrt{3}/2) = 2 - 1.73$$

$$= 0.27 \text{ m}$$

By law of conservation of energy

$$\frac{1}{2} mv^2 = mgh$$

$$\text{So, } v = \sqrt{2gh} = \sqrt{2 \times 0.27 \times 10}$$

$$v = \sqrt{5.4} = 2.32 \text{ m/s}$$

27

$$\text{MOI of hollow cylinder } I_1 = Mr^2$$

$$\text{MOI of solid cylinder, } I_2 = \frac{2}{5} Mr^2$$

$$\text{For hollow sphere, } \tau = I_1 \alpha_1$$

$$\text{For solid sphere, } \tau = I_2 \alpha_2$$

$$\therefore \frac{\alpha_2}{\alpha_1} = \frac{I_1}{I_2} = \frac{Mr^2}{\frac{2}{5}Mr^2} = \frac{5}{2}$$

$$\text{As } \omega = \omega_0 + \alpha t \text{ and } \omega_0 = 0$$

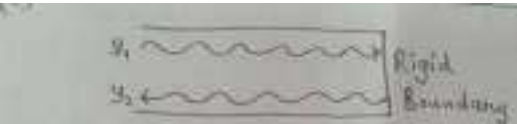
$$\therefore \frac{\omega_2}{\omega_1} = \frac{\alpha_2}{\alpha_1} = \frac{5}{2}$$

28

We assume perfect contact between bodies A and B and the rigid portion

	<p>(reaction) equals 200 N. There is no impending motion and no friction. The action-reaction forces between A and B are also 200 N. When the partition is removed, kinetic friction comes into play.</p> <p>Acceleration of A+B = $\frac{[200 - (150 \times 0.15)]}{15}$</p> <p>= 11.8 m/s²</p> <p>Friction on A = 0.15 x 50 = 7.5N</p> <p>200 – 7.5 – F_{AB} = 5x 11.8</p> <p>F_{AB} = 1.3 x 10² N opposite to motion</p> <p>F_{BA} = 1.3 x 10² N in the direction of motion</p> <p style="text-align: center;">OR</p> <p>a) For t < 0 and t > 6, the position of the particle is not changing hence no force is acting on the particle. For 0 < t < 6, position of the particle changes uniformly hence no force acts during this interval also.</p> <p>b) t=0 u=0</p> <p>After t=0, v = slope of OA = $\frac{3}{6}$ m/s</p> <p>At t = 0,</p> <p>Impulse = change in momentum</p> <p>= m (v – u) = 8 ($\frac{3}{6}$ – 0)</p> <p>= 4 kgm/s</p> <p>At t = 6s,</p> <p>u = $\frac{3}{6}$, v = 0</p> <p>Impulse = m (v – u) = 8 (0 – $\frac{3}{6}$)</p> <p>= - 4 kgm/s</p>	<p>½</p> <p>½</p> <p>½</p> <p>½</p> <p>½+½</p> <p>1</p> <p>½</p> <p>½</p>	
	SECTION D (Case study)		
29	<p>i) a) $x_0 \hat{i} + \hat{k}$</p> <p>ii) b) remains constant</p> <p>iii) d) $\frac{L}{4}$ OR iii) d) 3:1</p> <p>iv) b) 24 kg m²s⁻¹</p>	1x4	4
30	<p>i) c) At high temperature and low pressure</p> <p>ii) a) Ideal gas behavior</p> <p>iii) b) T₁ > T₂ OR a) 8.31 J/K</p> <p>iv) a)</p>	1x4	4
	SECTION E		
31(a)	<p>Work done in an adiabatic change of an ideal gas from the state (P₁V₁T₁) to the state (P₂V₂T₂).</p> <p>$W = \int_{V_1}^{V_2} P dV$ - (1)</p> <p>Using PV^γ = constant</p> <p>1) $W = \text{constant} \int_{V_1}^{V_2} \frac{dV}{V^\gamma}$</p>	<p>½</p> <p>½</p>	

	$= \text{constant} \left[\frac{V^{-\gamma+1}}{1-\gamma} \right]_{V_1}^{V_2}$ $= \frac{\text{constant}}{1-\gamma} \frac{1}{V_2^{\gamma-1}} - \frac{1}{V_1^{\gamma-1}}$ $= \frac{1}{1-\gamma} \frac{P_2 V_2^\gamma}{V_2^{\gamma-1}} - \frac{P_1 V_1^\gamma}{V_1^{\gamma-1}} \quad (\text{As } P_1 V_1^\gamma = P_2 V_2^\gamma = \text{constant})$ $= \frac{1}{1-\gamma} [P_2 V_2 - P_1 V_1]$ $\text{W.D.} = \frac{\mu R (T_1 - T_2)}{\gamma - 1}$	<p>1/2</p> <p>1/2</p> <p>1</p>	<p>3</p>
31(b)	<p>For adiabatic process</p> <p>(i) $T V^{\gamma-1} = \text{constant}$ $T_2 V_2^{\gamma-1} = T_1 V_1^{\gamma-1}$</p> $\therefore T_2 = \left(\frac{V_1}{V_2} \right)^{\gamma-1} = 300 \left(\frac{V}{2\sqrt{2}V} \right)^{\frac{5}{3}-1}$ $= 300 \times \frac{1}{(2^{3/2})^{2/3}}$ $= \frac{300}{2} \text{ K}$ <p>$T_2 = 150 \text{ K}$</p> <p>(ii) $\Delta U = \mu C_v dt$ for all processes $= 2 \times \frac{3}{2} R \times (150 - 300) \text{ J}$</p> $= -3 \times 8.3 \times 150 \text{ J}$ $= -3735 \text{ J}$	<p>1/2</p> <p>1/2</p> <p>1/2</p>	<p>2</p> <p>3 + 2 = 5</p>
31(a)	<p style="text-align: center;">OR</p> <p>Let there be n drops (small) combine to form a big drop.</p> <p>Then, $n \times \frac{4}{3} \pi r^3 = \frac{4}{3} \pi R^3$ or $n = \frac{R^3}{r^3}$</p> <p>Mass of bigger drop of water $M = \frac{4}{3} \pi R^3 \times 1$ ($\rho = 1 \text{ g/cc}$)</p> <p>Energy released = S.T x decrease in surface area</p> $E = S \times 4 \pi (nr^2 - R^2)$ $= S \times 4 \pi \left(\frac{R^3}{r^3} r^2 - R^2 \right)$ $= 4 \pi S R^3 \left(\frac{1}{r} - \frac{1}{R} \right)$ $= 3 \times \frac{4}{3} \pi R^3 S \left[\frac{R-r}{Rr} \right]$	<p>1</p> <p>1/2</p> <p>1/2</p>	

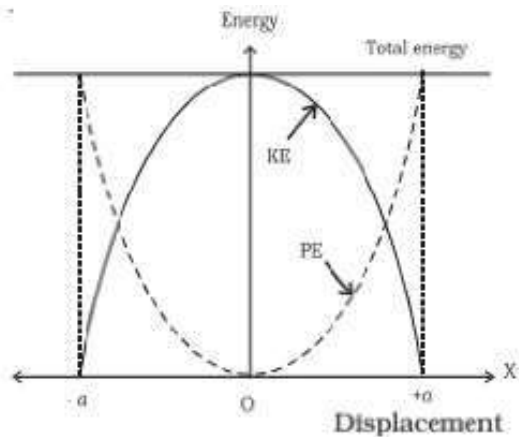
	$= 3 MS \left[\frac{R-r}{Rr} \right]$ <p>∴ K.E. produced = E</p> $\therefore \frac{1}{2} mv^2 = 3MS \left[\frac{R-r}{Rr} \right]$ $V = \sqrt{\frac{6S(R-r)}{Rr}}$	½	3
31(b)	$V_1 = 180 \text{ km/h} = 50 \text{ m/s}$ $V_2 = 234 \text{ km/h} = 65 \text{ m/s}$ $A = 2 \times 25 = 50 \text{ m}^2$ $\rho = 1 \text{ kg/m}^3$ $P_1 - P_2 = \frac{1}{2} \rho (V_2^2 - V_1^2)$ $= \frac{1}{2} \times 1 \times (65^2 - 50^2)$ <p>∴ Upward force = $(P_1 - P_2) A$</p> $= \frac{1}{2} \times (65^2 - 50^2) \times 50 \text{ N}$ <p>As the plane is in level flight, so</p> $mg = (P_1 - P_2) A$ <p>or, $m = \frac{(P_1 - P_2) A}{g}$</p> $= \frac{1 \times (65^2 - 50^2) \times 50}{2 \times 9.8}$ $= 4.4 \times 10^3 \text{ kg}$	½ ½ ½ ½	2 3 + 2 = 5
32 (a)	<p>Let the wave pulse moving from left to right (i.e. along +ve x –axis) be</p> $y_1(x,t) = r \sin(\omega t - kx)$ <p>As there is a phase change of π radian on reflection at the rigid boundary,</p> <p>∴ Reflected wave pulse travelling from right to left is</p> $y_2(x,t) = r \sin(\omega t + kx + \pi)$ $y_2(x,t) = -r \sin(\omega t + kx)$  <p>According to superposition principle, the resultant displacement y at time t and position x is given by</p> $y(x,t) = y_1(x,t) + y_2(x,t)$ $y(x,t) = r \sin(\omega t - kx) - r \sin(\omega t + kx)$ $y(x,t) = -r [\sin(\omega t + kx) - \sin(\omega t - kx)]$ <p>Using the relation</p> $\sin C - \sin D = 2 \cos \frac{C+D}{2} \sin \frac{C-D}{2}$ $y(x,t) = -2r \cos \omega t \sin kx$ $y(x,t) = -(2r \sin kx) \cos \omega t$	½ ½ ½	2
32(b)	<p>At the closed end of the pipe, $x = 0$</p> $\sin kx = \sin 0^\circ = 0$ <p>∴ $y = 0$ i.e. a node is formed.</p> <p>At the open end of the pipe of length L</p>	½	

	<p>$y = L$ an antinode is formed i.e. $y = \text{Max}$.</p> <p>When $\sin kL = \text{Max} = \pm 1$ $= \sin (2n - 1) \frac{\pi}{2}$</p> <p>$\therefore kL = (2n - 1) \frac{\pi}{2}$ where, $n = 1, 2, 3$</p> <p>$\frac{2\pi}{\lambda} L = (2n - 1) \frac{\pi}{2}$</p> <p>$\therefore \lambda = \frac{4L}{(2n-1)}$</p> <p>As $v = \nu \lambda$</p> <p>$\therefore \nu = \frac{v}{\lambda} = \frac{(2n-1)V}{4L}$</p> <p>$\therefore$ For frequency of n^{th} mode of vibration is $\nu_n = \frac{(2n-1)V}{4L}$</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	<p>2</p>
<p>32(c)</p>	<p>For first mode of vibration $n=1$ $\nu_1 = \frac{V}{4L}$</p> <p>For second mode of vibration $n = 2$ $\therefore \nu_2 = \frac{(2 \times 2 - 1)V}{4L} = \frac{3V}{4L} = 3\nu_1$</p> <p>For third mode of vibration $n = 3$ $\nu_3 = \frac{(2 \times 3 - 1)V}{4L} = \frac{5V}{4L} = 5\nu_1$</p> <p>$\nu_1 : \nu_2 : \nu_3 = 1 : 3 : 5$</p> <p>$\therefore$ only odd harmonics are present in a closed end organ pipe.</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	<p>1</p> <p>2+2+1 = 5</p>
<p>32</p>	<p style="text-align: center;">OR</p> <p><u>Kinetic Energy</u> of the particle at the instant t, is</p> <p>$K = \frac{1}{2} m v^2 = \frac{1}{2} m (a \omega \cos \omega t)^2$</p> <p>$K = \frac{1}{2} m \omega^2 a^2 \cos^2 \omega t$</p> <p>$K = \frac{1}{2} m \omega^2 a^2 (1 - \sin^2 \omega t)$</p> <p>$K = \frac{1}{2} m \omega^2 (a^2 - y^2)$</p> <p><u>Potential Energy</u></p> <p>Work done for small displacement dy against the restoring force is</p> <p>$dW = - F dy = - (-ky) dy$ $dW = ky dy$</p> <p>Total work done for displacing the particle from the mean position to a position of displacement y will be</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	

$$W = \int_0^y ky \, dy = \frac{1}{2} ky^2$$

This work done appears as PE.

$$U = \frac{1}{2} ky^2 = \frac{1}{2} m\omega^2 y^2$$



½

½

1

5

33

$$u = 0, a = 10 \text{ m/s}^2, s = 100 \text{ m}, t = ?, v = ?$$

$$\text{Using } v^2 - u^2 = 2as$$

$$v^2 - 0^2 = 2 \times 10 \times 100$$

$$v^2 = 2000$$

$$v = \sqrt{2000}$$

$$= 44.72 \text{ m/s}$$

$$\text{Using } s = ut + \frac{1}{2} at^2$$

$$100 = 0xt + \frac{1}{2} \times 10 \times t^2$$

$$100 = 5t^2$$

$$t^2 = \sqrt{20}$$

$$\therefore t = 4.472 \text{ s}$$

$$\text{Rebound velocity} = \left(1 - \frac{1}{10}\right) \times 44.72$$

$$= \frac{9}{10} \times 44.72$$

$$= 40.24 \text{ m/s}$$

Time taken to reach highest point

$$v = u + at$$

$$0 = 40.24 - 10 \times t$$

$$t = \frac{40.24}{10} = 4.024 \text{ s}$$

$$\therefore \text{Total time} = 4.472 + 4.024$$

$$= 8.496 \text{ s}$$

$$= 8.5 \text{ s}$$

½

½

½

½

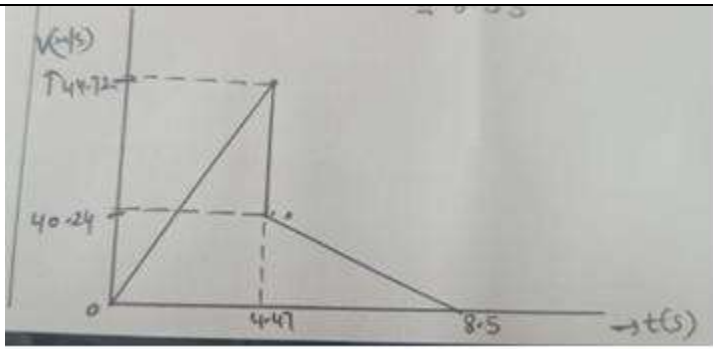
½

½

½

½

5



1

33

OR

Let the speed of ball 1 = $u_1 = 2u$ m/s

Then the speed of ball 2 = $u_2 = u$ m/s

Let the height covered by ball 1 before coming to rest = h_1

Let the height covered by ball 2 before coming to rest = h_2

At the top their velocities becomes zero

$$u^2 = 2gh \Rightarrow h = \frac{u^2}{2g} \Rightarrow h_1 = \frac{u_1^2}{2g}$$

$$h_1 = \frac{4u^2}{2g}$$

$$\text{and } h_2 = \frac{u^2}{2g}$$

$\frac{1}{2} + \frac{1}{2}$

A.T.Q $h_1 - h_2 = 15$ m (given)

$\frac{1}{2}$

$$\frac{4u^2}{2g} - \frac{u^2}{2g} = 15$$

$$\frac{u^2}{2g} [4-1] = 15$$

$$\Rightarrow u^2 = \frac{15 \times 2 \times 10}{3}$$

1

$$\Rightarrow u^2 = 100$$

$$u = 10 \text{ m/s}$$

$\frac{1}{2}$

\therefore For ball 1, $v_1 = u_1 + gt$

$$0 = 20 - 10 t_1$$

$$t_1 = 2\text{s}$$

$\frac{1}{2}$

For ball 2, $v_2 = u_2 + gt_2$

$$0 = 10 - 10 t_2$$

$$t_2 = 1\text{s}$$

\therefore Velocities of ball 1 and 2 are 20 m/s and 10m/s respectively.

$\frac{1}{2}$

Time interval between two balls

$$= t_1 - t_2$$

$$= (2-1)$$

$$= 1 \text{ second}$$

1

5

CLASS XI
CHEMISTRY THEORY (043)

M M:70

Time: 3 hours

General Instructions:

Read the following instructions carefully.

- (a) There are 33 questions in this question paper with internal choice.
 - (b) SECTION A consists of 16 multiple-choice questions carrying 1 mark each.
 - (c) SECTION B consists of 5 short answer questions carrying 2 marks each.
 - (d) SECTION C consists of 7 short answer questions carrying 3 marks each.
 - (e) SECTION D consists of 2 case-based questions carrying 4 marks each.
 - (f) SECTION E consists of 3 long answer questions carrying 5 marks each.
 - (g) All questions are compulsory.
 - (h) Use of log tables and calculators is not allowed.
-

SECTION A

*The following questions are multiple-choice questions with one correct answer.
Each question carries 1 mark. There is no internal choice in this section.*

1. The significant figures in 0.00051 are :
 - a) 5
 - b) 3
 - c) 2
 - d) 6

2. Which statement regarding photoelectric effect is **false**?
 - a) The kinetic energy of photoelectrons is independent of intensity of incident light.
 - b) Electrons can be ejected only if the incident light is greater than a certain frequency.
 - c) The wavelength of the incident radiation required for ejection of electrons is the same for all the metals.
 - d) The number of photoelectrons ejected increases with increasing intensity of light.

3. The first ionisation energy (in KJ/mol) of Na, Mg, Al and Si respectively are
 - a) 496, 577, 737, 786
 - b) 786, 737, 577, 496
 - c) 496, 577, 786, 737
 - d) 496, 737, 577, 786

4. Which of the following arrangements of molecules is correct on the basis of their dipole moment?
- $\text{BF}_3 > \text{NH}_3 > \text{NF}_3$
 - $\text{BF}_3 > \text{NF}_3 > \text{NH}_3$
 - $\text{NF}_3 > \text{NH}_3 > \text{BF}_3$
 - $\text{NH}_3 > \text{NF}_3 > \text{BF}_3$
5. A reaction will be non spontaneous if
- Both ΔH and ΔS are negative
 - Both ΔH and ΔS are positive
 - ΔH is negative and ΔS is positive
 - ΔH positive and ΔS is negative
6. In the reaction $\text{I}_2 + \text{I}^- \rightarrow \text{I}_3^-$, which is the Lewis base?
- I_2
 - I^-
 - I_3^-
 - Both b and c
7. What is the correct representation for the solubility product of SnS_2 ?
- $[\text{Sn}^{2+}] [\text{S}^{2-}]^2$
 - $[\text{Sn}^{4+}] [\text{S}^{2-}]^2$
 - $[\text{Sn}^{2+}] [2\text{S}^{2-}]^2$
 - $[\text{Sn}^{4+}] [2\text{S}^{2-}]^2$
8. Which of the following species undergoes a disproportionation reaction?
- ClO_4^-
 - F_2
 - NO_3^{2-}
 - P_4
9. Identify the alkene that produces Ethanal and Methanal on Ozonolysis
- But-2-ene
 - Propene
 - 2-Methylpropene
 - But-1-ene
10. The heat of combustion of carbon to CO_2 is -393.5 KJ/mol . The heat released upon formation of 35.2 g of CO_2 from carbon and oxygen gas is
- $+31.5 \text{ KJ}$
 - -630 KJ
 - -3.15 KJ
 - -315 KJ

11. How many hyperconjugative structures for propene are possible ?
- 5
 - 4
 - 3
 - 2
12. Select correct method to separate steam volatile and immiscible organic substances.
- Distillation
 - Steam Distillation
 - Fractional Distillation
 - Distillation under reduced pressure

Question number 13 to 16 are assertion reason types.

Given below are two statements labelled as Assertion (A) and Reason (R)

select the most appropriate answer from the options given below:

- Both A and R are true and R is the correct explanation of A**
- Both A and R are true but R is not the correct explanation of A.**
- A is true but R is false.**
- A is false but R is true.**

13. Assertion (A): The stabilising effect arises when two or more electrons with the same spin are present in the degenerate orbitals of a subshell ,

Reason (R): The number of exchanges that can take place is maximum when the subshell is either half filled or completely filled.

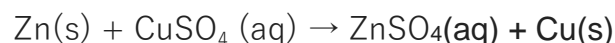
14. Assertion (A): The heat of combustion found by using bomb calorimeter gives the value of internal energy change ΔU and not enthalpy change ΔH

Reason(R): In a closed vessel, no work is done as $\Delta V=0$

15. Assertion (A): One molecule of water adds to alkynes only on warming with mercuric sulphate and dilute sulphuric acid at 333 K to form carbonyl compounds

Reason(R) : Alkynes are water immiscible and do not react with water easily.

16. Assertion (A): In the following reaction:



Cu is a reductant but itself gets oxidised.

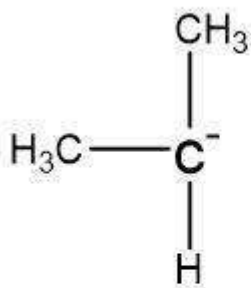
Reason(R): In a redox reaction, oxidant is reduced by accepting electrons and reductant is oxidised by losing electrons.

SECTION B

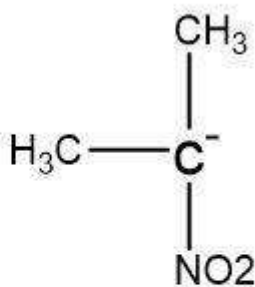
This section contains 5 questions with internal choice in one question.

The following questions are very short answer type and carry 2 marks each.

17. If the velocity of the electron in Bohr's first orbit is 2.19×10^6 m/s, Calculate the de Broglie wavelength associated with it.
18. Select an element from each of the following pairs which would have more negative first electron gain enthalpy. Give reasons also.
(a) O or S. (b) C or Si
19. (a) Why the Be_2 molecule does not exist. Give reason on the basis of molecular orbital theory.
(b) Out of ortho - nitrophenol and para-nitrophenol which one is not steam volatile. Give reason also.
20. Balance the following redox reaction :
 $\text{XeO}_6^{4-} + \text{F}^- \rightarrow \text{XeO}_3 + \text{F}_2$ (Acidic medium)
OR
 $\text{Cl}_2 \rightarrow \text{ClO}^- + \text{Cl}^-$ (Alkaline medium)
21. Out of the following carbocations, identify the one which is more stable. Give reason for your answer.



A



B

SECTION C

This section contains 7 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.

22. (a) Identify the limiting reagent if the reaction mixture contains 16 volume of dihydrogen gas and 6 volume of dioxygen gas which reacts to produce a certain volume of water vapour . Also, determine the volume of water vapour that would be produced. (2)

(b) The elements nitrogen and oxygen combine to produce the following oxides

N_2O , NO_2 , N_2O_3 , N_2O_4 and N_2O_5

Which law is illustrated by the above example. (1)

23. (i) Arrange the following ions in order of their increasing radii:

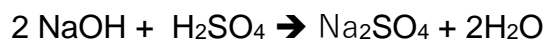
Li^+ , Mg^{2+} , K^+ , Al^{3+} .

(ii) Explain why the formation of Cl^- is exothermic but formation of O^{2-} is endothermic?

24. $Na(s) + \frac{1}{2} Br_2(l) \rightarrow NaBr(s) \quad \Delta H_f$

Construct the Born-Haber cycle for $NaBr(s)$. Give all the reactions involved.

25. What volume of 0.1 M $NaOH$ solution is required to neutralise 100 ml of conc. Aq. H_2SO_4 which contains 98% H_2SO_4 by mass .The density of conc. H_2SO_4 solution is 1.84 g /ml . $NaOH$ reacts with H_2SO_4 according to the following equation:



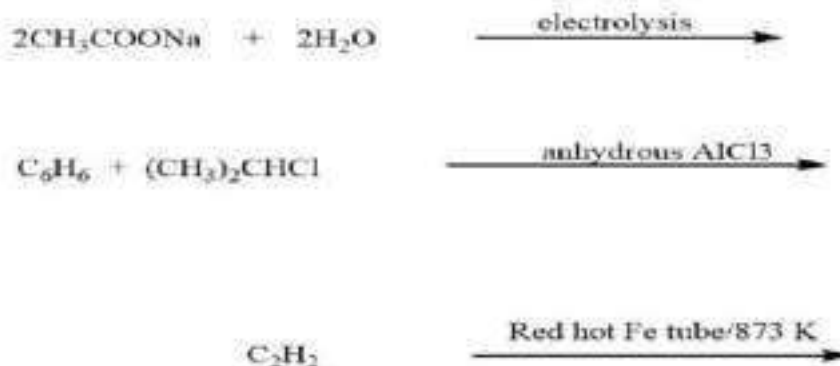
26. The bond energies of C-C, $C \equiv C$, H-H and C-H linkages are 350, 600, 400 and 410 KJ/ mol respectively. Calculate the heat of hydrogenation of ethyne to form ethane.

OR

Work done in the isothermal expansion of an ideal gas from 4 dm³ to 6 dm³ against a constant external pressure of 2.5 atm was used to heat up 1 mole of water at 20°C. Calculate the final temperature of water. Given that the specific heat of water = 4.2 J g⁻¹K⁻¹

27. In Lassaigne's test for an element 'X' in an organic compound violet colouration is obtained on adding a few drops of sodium nitroprusside . Identify the element 'X' present in the compound. Estimate the percentage of 'X' in 0.16 g of the organic compound, which on oxidation and subsequent reaction with barium chloride gave 0.5 g of white ppt of a compound having molar mass 233 g per mole.

28. Complete the following reactions :



SECTION D

The following questions are case -based questions. Each question has an internal choice and carries 4 (1+1+2) marks each. Read the passage carefully and answer the questions that follow.

29. There are two different approaches that have been put forward to explain the shapes of molecules. These are valence shell electron pair repulsion theory and hybridisation. VSEPR theory is based on the repulsions among the electron pairs (bond pairs and lone pairs) present around the central atom so that they take up the directions. Where there are minimum repulsions between them. Hybridisation is based on mixing atomic orbitals of an atom (empty, half filled or fully filled)of comparable energy forming new equivalent orbitals of the same shape and energy, called hybrid orbitals. These hybrid orbitals then overlap with the orbitals of other atoms. Overlapping may take place between two half filled orbitals or one empty and one fully filled orbital. The direction of overlap gives the direction of bonds formed and hence the shape of molecule or ion.

Based on the above paragraph, answer the following questions.

1. On the basis of VSEPR theory, explain the shape of ammonium ion.
2. Briefly explain the shape of the SF₄ molecule.

3. On the basis of hybridisation, predict the shape of PCl_5 . Why does it easily dissociate into PCl_3 ?

OR

Give reason for the following :

(i) Although NH_3 involves sp^3 hybridisation, the bond angle H-N-H is not equal to $109^\circ 28'$

(ii) Bond angle in PH_3 is less than that in NH_3

30. Students were analyzing the physical and chemical properties of a compound with the formula C_4H_8 . They observed that the compound exists in two different forms, which they have labelled as "Alpha" and "Beta". The students have provided the following information about the two forms:

Alpha:

- Melting point: -105.5°C
- Solubility in water: Insoluble

Beta:

- Melting point: -138.9°C
- Solubility in water: Soluble

Answer the following questions :

1. Write the IUPAC name of Alpha form.
2. Identify the type of isomerism exhibited by Alpha and Beta
3. Draw the structural formula for each form (Alpha and Beta) of the compound C_4H_8 .

OR

3. Give reasons for the difference in melting and boiling points of the two forms.

SECTION E

The following questions are long answer types and carry 5 marks

each. All questions have an internal choice.

31. Attempt any **FIVE** of the following :

- a) An electron is in $4d_{z^2}$ orbital . Give the possible values of l and m quantum numbers for this electron .
- b) What is the maximum no. of emission lines when the excited electron of a hydrogen atom in $n=5$ drops to the second shell ?
- c) Write the mathematical expression for Heisenberg's uncertainty principle.
- d) State Hund's rule of maximum multiplicity.
- e) Write the electronic configuration of the element with atomic no. 29
- f) Draw the boundary surface diagram for dx^2-y^2 orbital.
- g) Which orbital in each of the following pairs is lower in energy in a multi electron atom
 - i) 5f and 4d
 - ii) 6s and 4f

32. a) Derive the relationship between K_P and K_C .

- b) Calculate the pH of the mixture 0.1M, 100ml H_2SO_4 solution + 0.1 M, 100 ml NaOH solution.
- c) Define Common ion effect.

OR

- a) Define Buffer solution
- b) Hydrolysis of sucrose gives, equilibrium constant K_C for the reaction is 2×10^{13} at 300 K. Calculate ΔG^0 . ($R=8.314 \text{ J K}^{-1} \text{ mol}^{-1}$)
- c) Arrange the following in increasing order of pH. Also write the appropriate reason. HF , H_2O , NH_3

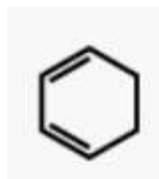
33. a) Assess the given structures and identify the aromatic compounds giving reasons :



(a)



(b)



(c)



(d)

b) Write 3-step mechanism for the reaction of benzene with acetic anhydride in the presence of anhydrous AlCl_3

OR

- a) Compare nitrobenzene and aniline on the basis of the fact that electrophilic substitution reaction for nitrobenzene produces meta product and that of aniline produces ortho,para products.
- b) Write stepwise mechanism for the reaction of But-1-ene with HBr in the presence of Benzoyl peroxide.

**Marking Scheme
Sample Question Paper
Chemistry XI
2024-25**

Q. No	Sub part	Value Points	Step wise marks	Total Marks
1		(C) 2	1	1
2		(C) The wavelength of the incident radiation required for ejection of electrons is the same for all the metals.	1	1
3		(D) 496, 737, 577 , 786	1	1
4		(D) $\text{NH}_3 > \text{NF}_3 > \text{BF}_3$	1	1
5		(D) ΔH is positive and ΔS is negative	1	1
6		(B) I^-)1	1
7		(B) $[\text{Sn}^{4+}] [\text{S}^{2-}]^2$	1	1
8		(D) P_4	1	1
9		(B) 2- Methylpropene	1	1
10		(D) -315 kJ	1	1
11		(C) 3	1	1
12		(B) Steam Distillation	1	1

13	(B) Both A and R are true but R is not the correct explanation of A	1	1
14	(A) Both A and R are true and R is the correct explanation of A	1	1
15	(A) Both A and R are true and R is the correct explanation of A	1	1
16	(D) A is false but R is true	1	1
17	$\lambda = \frac{h}{mv} = \frac{6.626 \times 10^{-34} \text{ Js}}{9.1 \times 10^{-31} \text{ Kg} \times 2.19 \times 10^6 \text{ ms}^{-1}}$ $= 0.332 \times 10^{-9} \text{ m} = 0.332 \text{ nm}$	1 1	2
18	<p>(a) S has more negative first electron gain enthalpy. The size of O is much smaller than that of sulphur. As a result, electron electron repulsions in the smaller 2p subshell of oxygen are comparatively larger than those present in the bigger 3p-subshell of sulphur. Therefore, S has a higher tendency to accept an additional electron than oxygen.</p> <p>(b) C has more negative electron gain enthalpy than Si. This is because C-atom has smaller size than Si atom and electron - electron repulsions in carbon and silicon unlike oxygen and sulphur are not very large because they contain only four electrons in the outermost shell.</p>	1 1	2
19	<p>(a) Molecular orbital electronic configuration of $\text{Be}_2 = \sigma 1s^2 \sigma^* 1s^2 \sigma 2s^2 \sigma^* 2s^2$ Bond order = $\frac{1}{2}(4-4) = 0$ Hence, Be_2 doesn't exist</p> <p>(b) p- nitrophenol has a higher boiling point due to the presence of intermolecular hydrogen bond and that's why it is not steam volatile.</p>	1 1	2

20.	<p>overall reaction:</p> $\text{XeO}_6^{4-} + \text{F}^- \longrightarrow \text{XeO}_3 + \text{F}_2 \quad (\text{Acidic medium})$ $\text{XeO}_6^{4-} + 2\text{e}^- \longrightarrow \text{XeO}_3 \quad (\text{Reduction})$ $2\text{F}^- \longrightarrow \text{F}_2 + 2\text{e}^- \quad (\text{Oxidation})$ $\text{XeO}_6^{4-} + 2\text{F}^- \longrightarrow \text{XeO}_3 + \text{F}_2$ <p>Acidic medium:</p> $\text{XeO}_6^{4-} + 2\text{F}^- + 6\text{H}^+ \longrightarrow \text{XeO}_3 + \text{F}_2 + 3\text{H}_2\text{O}$ <p style="text-align: center;">OR</p> <p>Overall reaction :-</p> $\text{Cl}_2(\text{l}) \rightarrow \text{Cl}^-(\text{aq}) + \text{ClO}^-(\text{aq})$ <p>Half cell reaction at anode :-</p> $\text{Cl}_2(\text{l}) + 2\text{H}_2\text{O}(\text{l}) + 4\text{OH}^-(\text{aq}) \rightarrow 2\text{ClO}^-(\text{aq}) + 4\text{H}_2\text{O}(\text{l}) + 2\text{e}^-$ <p>Half cell reaction at cathode :-</p> $\text{Cl}_2(\text{l}) + 2\text{e}^- \rightarrow 2\text{Cl}^-(\text{aq})$ <p>Adding above two half cell reaction, we get :-</p> $\text{Cl}_2(\text{l}) + 2\text{OH}^-(\text{aq}) \rightarrow \text{ClO}^-(\text{aq}) + 4\text{H}_2\text{O}(\text{l}) + \text{Cl}^-(\text{aq})$	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>2</p>	
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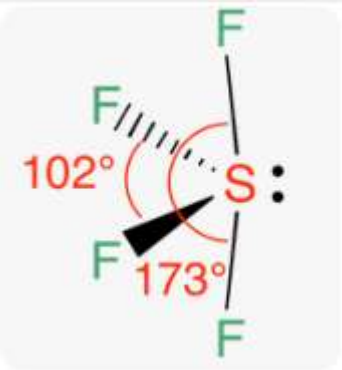
21		<p>Carbanion A is more stable Reason:- B is destabilized by electron withdrawing effect of NO₂.</p>	1 1	2
22.	(a)	$2\text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O}$ <p>According to the above equation 2 vol. Of H₂ requires 1 vol of O₂ Therefore, 16 vol of H₂ will require 8 vol of O₂</p> <p>Amount of O₂ in the reaction mixture is 6 vol , hence O₂ is the limiting reagent</p> <p>1 vol of O₂ produces 2 vol of H₂O Hence, 6 vol of O₂ will produce 12 vol of H₂O</p>	1 1 1	3
23.	(b)	<p>Law of multiple proportions.</p>	1	
		<p>(i) $\text{Al}^{3+} < \text{Mg}^{2+} < \text{Li}^+ < \text{K}^+$</p> <p>(ii) Formation of Cl⁻ from Cl (g) is exothermic because its first electron gain enthalpy is negative. $\text{Cl} (\text{g}) + \text{e}^- \rightarrow \text{Cl}^- (\text{g}) \quad \Delta H = -\text{ve}$</p> <p>Formation of O²⁻ involves two processes :</p> $\text{O} (\text{g}) + \text{e}^- \rightarrow \text{O}^- \quad \Delta H_1 = -\text{ve}$ $\text{O}^- (\text{g}) + \text{e}^- \rightarrow \text{O}^{2-} \quad \Delta H_2 = +\text{ve}$ <p>$\Delta H_2 > \Delta H_1$ So, ΔH For the formation of O²⁻ (g) from O(g) gas is positive.</p>	1 2	3

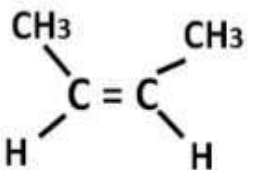
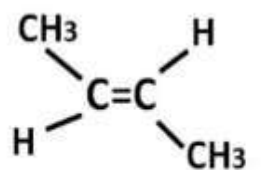
24.	<p style="text-align: center;"> $\Delta H_f^\circ = \Delta_{\text{sub}}H^\circ + \Delta_fH^\circ + 1/2\Delta_{\text{sub}}H^\circ + \Delta_{\text{vap}}H^\circ + \Delta_{\text{crg}}H^\circ + \Delta_{\text{mixc}}H^\circ$ </p>	2 1	3
25.	<p>Mass of H_2SO_4 = volume x density = 100mL x 1.84gmL⁻¹ = 184 g</p> <p>Solution contains 98% H_2SO_4 by mass Hence , amount of H_2SO_4 in the solution = $\frac{98 \times 184}{100}$ =180.32g</p> <p>Molar mass of H_2SO_4 = 2 + 32 + 64 = 98 g mol⁻¹</p> $n = \frac{\text{given mass}}{\text{molar mass}} = \frac{180.32}{98} = 1.84 \text{ moles}$ <p>According to the equation 1 mole of H_2SO_4 reacts with 2 moles of NaOH Therefore, 1.84 moles of H_2SO_4 requires 2 x 1.84 = 3.68 moles of NaOH</p>	1 1	3

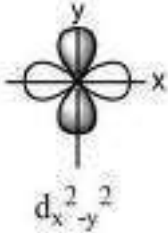
	$\text{Molarity} = \frac{\text{no. of moles}}{\text{Volume of solution in litres}}$ $\text{Volume} = \frac{3.68}{0.1} = 36.8 \text{ L}$	1	
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26	<p> $\text{HC} \equiv \text{CH} + 2\text{H}_2 \xrightarrow{\text{(Raney Nickel)}} \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H} - \text{C} - \text{C} - \text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ Ethyne Dihydrogen Ethane </p> <p> $\Delta_{\text{reaction}}H = \Sigma \text{Bond Enthalpy}(r) - \Sigma \text{Bond Enthalpy}(p)$ </p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Bond Enthalpies of Reactants</th> <th>Bond Enthalpies of Products</th> </tr> </thead> <tbody> <tr> <td> $\text{C} \equiv \text{C} = 600 \text{ KJ mol}^{-1}$ $2 \times \text{C-H} = 2 \times 410 = 820 \text{ KJ mol}^{-1}$ $2 \times \text{H-H} = 2 \times 400 = 800 \text{ KJ mol}^{-1}$ Total Bond Enthalpy of Reactants = 2220 KJ mol⁻¹ </td> <td> $\text{C-C} = 350 \text{ KJ mol}^{-1}$ $6 \times \text{C-H} = 6 \times 410 = 2460 \text{ KJ mol}^{-1}$ Total Bond Enthalpy of Products = 2810 KJ mol⁻¹ </td> </tr> </tbody> </table> <p> $\Delta_{\text{reaction}}H = 2220 - 2810 = -590 \text{ KJ mol}^{-1}$ </p>	Bond Enthalpies of Reactants	Bond Enthalpies of Products	$\text{C} \equiv \text{C} = 600 \text{ KJ mol}^{-1}$ $2 \times \text{C-H} = 2 \times 410 = 820 \text{ KJ mol}^{-1}$ $2 \times \text{H-H} = 2 \times 400 = 800 \text{ KJ mol}^{-1}$ Total Bond Enthalpy of Reactants = 2220 KJ mol ⁻¹	$\text{C-C} = 350 \text{ KJ mol}^{-1}$ $6 \times \text{C-H} = 6 \times 410 = 2460 \text{ KJ mol}^{-1}$ Total Bond Enthalpy of Products = 2810 KJ mol ⁻¹	<p>1/2</p> <p>1 + 1</p> <p>1/2</p>	3
Bond Enthalpies of Reactants	Bond Enthalpies of Products						
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26	<p style="text-align: center;">OR</p> <p>As work is being done against external pressure, the process is irreversible hence,</p> $W = -P_{\text{ext}} \Delta V$ $= 2.5 (6 - 4) = -5.0 \text{ atm-L} \quad (1 \text{ atm-L} = 101.3 \text{ J})$ $W = -5.0 \times 101.3 = -506.5 \text{ J}$ <p>For isothermal expansion $\Delta U = 0$</p> <p>So, $q = -W = 506.5 \text{ J}$</p> <p>This heat is used to heat 1 mole of water</p> <p>So, $q = m c \Delta T$</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3				

	$506.5 = 18 \times 4.2 \times \Delta T$ $\Delta T = 6.725 \text{ }^\circ\text{C}$ Final Temperature = $\Delta T + \text{Initial Temperature}$ Final Temperature = $20 + 6.725 = 26.725 \text{ }^\circ\text{C}$	$\frac{1}{2}$	
27.	<p>Element 'X' is Sulphur</p> <p>The white ppt formed is of BaSO₄ which has a molar mass = 233 g/mol</p> $n = \frac{\text{given mass}}{\text{molar mass}} = \frac{0.5}{233} = 0.00215 \text{ moles}$ <p>Since 1 mole of barium sulphate contains 1 mole of sulphur , the number of moles of sulfur is also 0.00215 mol.</p> <p>The mass of sulfur is= number of moles x molar mass = 0.00215 mol x 32 g/mol = 0.0688 g</p> <p>The percentage of sulfur in the organic compound is:</p> $\%S = \frac{\text{mass of sulphur}}{\text{mass of organic compound}} \times 100 = \frac{0.0688}{0.16} \times 100 = 42.5 \%$	1 $\frac{1}{2}$ $\frac{1}{2}$ 1	3

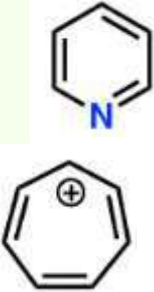
28.	<div style="text-align: center;"> $2\text{CH}_3\text{COONa} + 2\text{H}_2\text{O} \xrightarrow{\text{electrolysis}} \text{H}_3\text{C}-\text{CH}_3 + 2\text{NaOH} + \text{H}_2$ $\text{C}_6\text{H}_6 + (\text{CH}_3)_2\text{CHCl} \xrightarrow{\text{anhydrous AlCl}_3} \text{C}_6\text{H}_5\text{C}(\text{CH}_3)_2$ $\text{C}_2\text{H}_2 \xrightarrow{\text{Red hot Fe tube/873 K}} \text{C}_6\text{H}_6$ </div>	1 1 1	3
29.	<p>1. Based on VSEPR (valence shell electron pair repulsion theory), the four bond pairs of electrons on nitrogen will repel each other. As a result, they will be pushed apart giving the ammonium ion-molecule a tetrahedral shape. Therefore, it has tetrahedral electron geometry.</p> <p>2. The central atom in the Sulphur tetrafluoride molecule has 5 electron pairs. There are 4 bond pairs and one lone pair. It has a trigonal bipyramidal geometry (or structure). The lone pair is in the equatorial plane giving an overall see-saw shape.</p> <div style="text-align: center;">  </div> <p>3. The atomic number of phosphorus is 15. The electronic configuration of phosphorus is:</p>	1 1 2	4

	<p>$P=1s^2 2s^2 2p^6 3s^2 3p^3$ The hybridization in PCl_5 is sp^3d. Therefore, the shape of PCl_5 is trigonal bipyramidal. The two axial bond pairs experience more repulsion than the three equatorial bond pairs. This makes the axial bond relatively weaker than the equatorial bond and they get easily broken.</p> <p style="text-align: center;">OR</p> <p>(i) This is mainly due to the presence of a lone pair which usually exerts greater repulsion on the bonding orbitals. Hence bond angle is less than $109^\circ 28''$. (ii) The bond angle in NH_3 is larger than in PH_3 because of the lower electronegativity of P which permits electron-density to be displaced towards hydrogen to a greater extent than in the case of NH_3.</p>	2	
30.	<ol style="list-style-type: none"> 1. Trans-but-2-ene 2. Geometrical Isomerism 3. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>cis-But-2-ene</p> </div> <div style="text-align: center;">  <p>trans-But-2-ene</p> </div> </div> <p style="text-align: center;">OR</p> <p>The melting point of trans isomers is generally higher than that of cis isomers because in trans isomer, bulky groups lie on the opposite side of the double bond. Therefore, the molecule is symmetrical and hence packed well in the crystal lattice. Boiling point of cis isomers is higher than trans isomers because cis isomers is more polar and hence they have strong intermolecular forces between the molecules.</p>	1 1 2 2	4

31.	<p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>(e)</p> <p>(f)</p> <p>(g)</p>	<p>$l=2$ and $m=0$</p> <p><i>no. of emission lines</i> = $\frac{(n_2 - n_1)(n_2 - n_1 + 1)}{2} = \frac{(5-2)(5-2+1)}{2} = 6$</p> <p>$\Delta x \cdot \Delta p \geq \frac{h}{4\pi}$</p> <p>Hund's Rule of Maximum Multiplicity: Pairing of electrons in the orbitals belonging to the same subshell (p, d or f) does not take place until each orbital belonging to that subshell has got one electron each , that is , it is singly filled with parallel spin.</p> <p>$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$</p>  <p>(i) 4d</p> <p>(ii) 6s</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	<p>1X5 =5</p>
32.	(a)	<p>$aA + bB \rightleftharpoons cC + dD$</p> <p>• ideal gas law: $PV = nRT$ $P = \frac{n}{V} RT$</p> <p>$K_c = \frac{[C]^c [D]^d}{[A]^a [B]^b}$</p> <p>$K_p = \frac{(P_C)^c (P_D)^d}{(P_A)^a (P_B)^b} = \frac{\left(\frac{n}{V} RT\right)^c \left(\frac{n}{V} RT\right)^d}{\left(\frac{n}{V} RT\right)^a \left(\frac{n}{V} RT\right)^b}$</p> <p>Plugging this into the expression for K_p</p> <p>So, $K_P = K_C (RT)^{\Delta n}$</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p>	<p>5</p>

<p>(b)</p>	<p> $\text{H}_2\text{SO}_4(\text{aq}) \rightarrow 2\text{H}^+ + \text{SO}_4^{2-}$ 0.1M, 100 ml 10 millimoles 20 millimoles </p> <p> $\text{NaOH} \rightarrow \text{Na}^+ + \text{OH}^-$ 0.1M, 100 ml 10 millimoles 10 millimoles </p> <p>Number of millimoles of H^+ and OH^- neutralized in the mixture = 10 millimoles</p> <p>Number of millimoles of H^+ ion left unreacted in the mixture = 20 - 10 = 10 millimoles</p> <p> $[\text{H}^+]$ in the mixture = millimoles of H^+ ion / total volume of mixture $10 / 200 = 0.05 \text{ M}$ $\text{pH} = -\log[\text{H}^+]$ $\text{pH} = -\log(5 \times 10^{-2})$ $\text{pH} = 1.3010$ </p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	
<p>(c)</p>	<p>Common ion effect - It is a phenomenon in which the degree of dissociation of any weak electrolyte is suppressed by addition of a small amount of strong electrolyte containing a common ion.</p>	<p>1</p>	
<p>(a)</p>	<p style="text-align: center;">OR</p> <p>Buffer solution - It is a water solvent-based solution which consists of a mixture containing a weak acid and the conjugate base of the weak acid or a weak base and the conjugate acid of the weak base. They resist a change in pH upon dilution or upon the addition of a small amount of acid/alkali to them.</p>	<p>1</p>	
<p>(b)</p>	<p> $\Delta G^0 = -2.303 R T \log K_c$ $\Delta G^0 = -2.303 \times 8.314 \times 300 \log(2 \times 10^{13})$ $\Delta G^0 = -7.64 \times 10^4 \text{ J mol}^{-1}$ </p>	<p>1</p> <p>1/2</p> <p>1/2</p>	
<p>(c)</p>	<p> $\text{HF} < \text{H}_2\text{O} < \text{NH}_3$ (Increasing order of pH) Reason:- Fluorine, oxygen and nitrogen belong to the same row of the periodic table. H-A bond priority becomes the deciding factor for determining the acidic strength. As the </p>	<p>1</p>	

		electronegativity of A increases, the strength of acid also increases and pH decreases.	1	
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33.	a)	<p>a) and d) i.e.</p>  <p>are aromatic as are planar, show complete delocalisation and follow Huckel's rule .</p> <p>1. Generation of the Acylium Ion: $\text{RCOCl} + \text{AlCl}_3 \rightarrow \text{RCO}^+ + \text{AlCl}_4^-$</p> <p>2. Electrophilic Attack on Benzene: $\text{C}_6\text{H}_6 + \text{RCO}^+ \rightarrow \text{C}_6\text{H}_6\text{RCO}^+$</p> <p>3. Restoration of Aromaticity: $\text{C}_6\text{H}_6\text{RCO}^+ \rightarrow \text{C}_6\text{H}_5\text{RCO} + \text{H}^+$ $\text{H}^+ + \text{AlCl}_4^- \rightarrow \text{HCl} + \text{AlCl}_3$</p> <p>OR</p> <p>a) Nitro group is electron withdrawing group. Due to resonance the ortho and para positions get positive charges hence incoming electrophile attacks at meta position whereas amino group is electron donating group, ortho and para positions develop negative charge hence the incoming electrophile is directed at ortho and para positions.</p>	1/2	
			1/2	
	b)		1	
			1	
			1	
	a)		1	

	b)	<p>1: Formation of free radicals: Benzoyl peroxide decomposes upon heating to form benzoyloxy radicals:</p> $(C_6H_5CO)_2O_2 \rightarrow 2C_6H_5CO\cdot$ $C_6H_5\cdot + HBr \rightarrow C_6H_6 + Br\cdot$ <p>2. Addition of bromine radical to but-1-ene:</p> <p>The bromine radical adds to the double bond of but-1-ene, forming a secondary radical (because the secondary radical is more stable than the primary radical):</p> $CH_2 = CH - CH_2 - CH_3 + Br\cdot \rightarrow CH_2\cdot - CHBr - CH_2 - CH_3$ <p>3. Formation of the final product:</p> <p>The secondary radical reacts with another molecule of HBr to form 1-bromobutane and regenerate the bromine radical, allowing the chain reaction to continue:</p> $CH_2\cdot - CHBr - CH_2 - CH_3 + HBr \rightarrow CH_3 - CHBr - CH_2 - CH_3 + Br\cdot$	1 1 1 1	5
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**CLASS XI
BIOLOGY (044)**

Maximum Marks: 70

Time: 3 hours

General Instructions:

- (i) All questions are compulsory.
(ii) The question paper has five sections and 33 questions.
(iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.
(iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
(v) Wherever necessary, neat and properly labelled diagrams should be drawn.

SECTION A

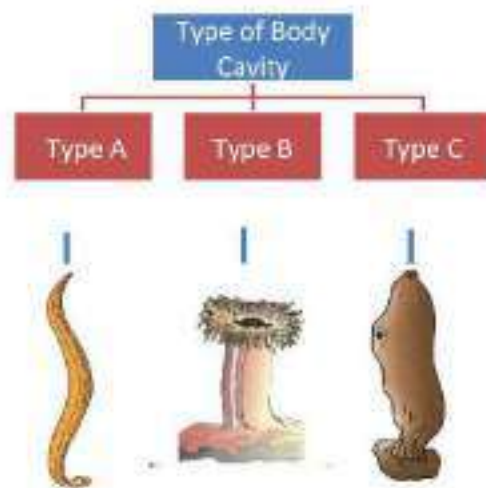
1. The stage of meiosis which involves the splitting of centromere is
(a) Anaphase I
(b) Metaphase I
(c) Metaphase II
(d) Anaphase II
2. Match the following and choose the correct option:

	Type of vascular bundle		Found in
A	Open, conjoint	i	Roots of potato
B	Closed, conjoint	ii	Roots of grass
C	Open, radial	iii	Stem of mustard
D	Closed, radial	iv	Stem of sugarcane

- (a) A-iv, B-iii, C-ii, D-i
(b) A-iii, B-iv, C-i, D-ii
(c) A-i, B-ii, C-iv, D- iii
(d) A-ii, B-i, C-iii, D-iv
3. Which of the following pairs of plants has stamens with different lengths in their flower?
(a) *Salvia* and Sweet pea
(b) Mustard and China rose
(c) *Salvia* and Mustard
(d) Mustard and Lily
4. Which one of the following options gives the correct categorisation of animals according to the type of nitrogenous wastes produced by them?

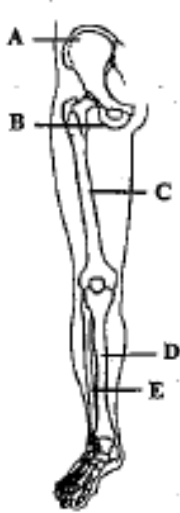
	Ammonotelic	Ureotelic	Uricotelic
(a)	Aquatic amphibians	Human, lizard	Cockroach, crow
(b)	Aquatic amphibians	Frog, horse	Grasshopper, eagle
(c)	Aquatic amphibians	Frog, human	Bat, crocodile
(d)	Aquatic amphibians	Horse, lizard	Butterfly, sparrow

5. 70S and 80S ribosomes are found respectively in
- mitochondria and bacteria
 - bacteria and cytoplasm of human cell
 - cytoplasm of plant cell and cytoplasm of human cell
 - cytoplasm of human cell and mitochondria
6. In the flow chart below, categorise the animals (A-C) based on the type of body cavity in the given examples.



- A – Acoelomate; B – Pseudocoelomate; C – True coelomate
 - A – Pseudocoelomate; B – Acoelomate; C – True coelomate
 - A – True coelomate; B – Acoelomate; C – Pseudocoelomate
 - A – Pseudocoelomate; B – True coelomate; C – Acoelomate
7. Carnivora includes:
- group of organisms belonging to related genera
 - group of organisms belonging to related species
 - group of organisms belonging to related families
 - group of organisms which are similar in all features
8. Choose the correct statement.
- Lichen is a composite organism formed by the symbiotic association of an algae and a protozoan.
 - Paramecium* and *Plasmodium* belong to the same kingdom as that of *Penicillium*.
 - Nostoc* and *Anabaena* are decomposers belonging to Kingdom Protista.
 - Euglena* belonging to Kingdom Protista acts like a predator of small organisms in the absence of light.
9. Meiotic division in pteridophytes occurs
- During gamete formation
 - After gamete formation
 - During spore formation
 - After spore formation

10. Observe the diagram given below. Parts labelled as A to E respectively indicate



- (a) A-Ilium, B- Ischium, C- Femur, D- Tibia, E- Fibula
- (b) A-Ischium, B- Ilium, C- Humerus, D- Radius, E- Ulna
- (c) A-Ilium, B- Ischium, C- Femur, D- Fibula, E- Tibia
- (d) A-Ischium, B- Ilium, C- Femur, D- Tibia, E- Fibula

11. Which of the following regions of the brain is incorrectly paired with its function?

- (a) Medulla oblongata- controls respiration and cardiovascular reflexes
- (b) Limbic system- regulates sexual behaviour and expression of emotional reactions
- (c) Hypothalamus- produces releasing hormones and regulates temperature, hunger and thirst
- (d) Cerebellum- maintains posture, regulates intersensory association and communication

12. The condition of erythroblastosis foetalis occurs only when

- (a) both father and mother are Rh-
- (b) father is Rh- and mother is Rh+
- (c) mother is Rh+ and foetus is Rh-
- (d) mother is Rh- and foetus is Rh+

Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. A is false but R is true.

13. Assertion: Body tissues obtain O_2 from oxyhaemoglobin.

Reason: Dissociation of oxyhaemoglobin is caused by high O_2 and low CO_2 concentration.

14. Assertion: Binomial nomenclature is system of providing name with two components.

Reason: The first component represents the specific epithet and the second component represents the generic name.

15. Assertion: Trichomes may be branched or unbranched and soft or stiff.

Reason: Trichomes help in preventing water loss due to transpiration.

16. Assertion: Sunflower plant has long internodes with leaves far apart.

Reason: Sunflower produces sufficient amount of gibberellins during its growing period.

SECTION B

17. Differentiate between *Spirogyra* and *Gelidium* on the basis of:

- (i) Pigment composition
- (ii) Stored food

18. Complete the following table relating the protein with its function

Protein	Function
(a) _____	Intercellular ground substance
Trypsin	_____ (b) _____
(c) _____	Hormone
GLUT-4	(d) _____

19. State a difference between each of the following:

- (i) Inspiratory capacity and expiratory capacity
- (ii) Cortical and juxtamedullary nephrons

OR

Compare the transmission of nerve impulse across motor end plate and chemical synapse.

20. Compare the structure of the causative agents of potato spindle tuber disease and tobacco mosaic disease.

21. (a) Which of the following plants show photorespiration?

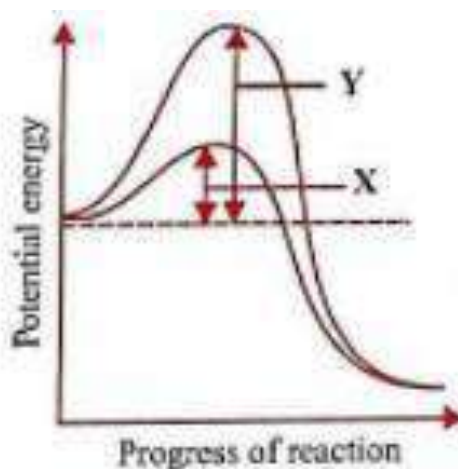
Cotton, Maize, Peanut, Sorghum

(b) Which enzyme can act as both a carboxylase and oxygenase?

SECTION C

22. 'The axonal membrane is said to be polarised even at rest.' Explain.

23. Study the graph and answer the following questions:



(a) Which among X and Y shows activation energy in the presence of enzyme?

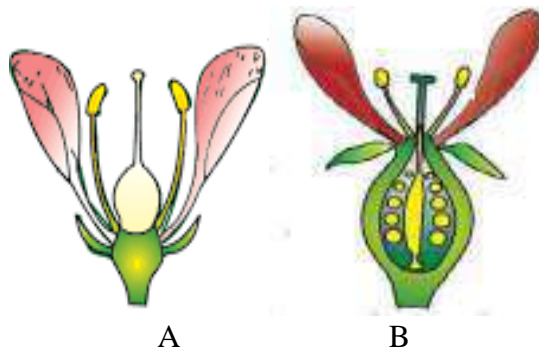
(b) How does the presence of enzymes affect the rate of reaction?

(c) Is the reaction shown above exothermic or endothermic? On what basis did you conclude this?

24. Mention the steps involved in the sexual reproduction in fungi.

25. (a) Why is dicot leaf called dorsiventral and monocot leaf isobilateral?

(b) Identify the types of flowers A and B on the basis of the position of floral parts on thalamus.



26. Give reasons for the following:

- (a) Tea plants are decapitated in tea gardens.
- (b) Ethephon is applied on cucumber plants.
- (c) Gibberellins are applied to apple trees.

27. Name the phylum in which the following structures are found. Write the functions of these structures.

- (i) Water vascular system
- (ii) Radula
- (iii) Parapodia

28. (a) Which organelles constitute the endomembrane system of a eukaryotic cell?

(b) Why are these considered as the endomembrane system?

SECTION D

Q.No 29 and 30 are case-based questions. Each question has subparts with internal choice in one subpart.

29. Anjali observed a flower and drew the following floral diagram. Based on the diagram, answer the following questions:



(a) Identify the type of placentation shown.

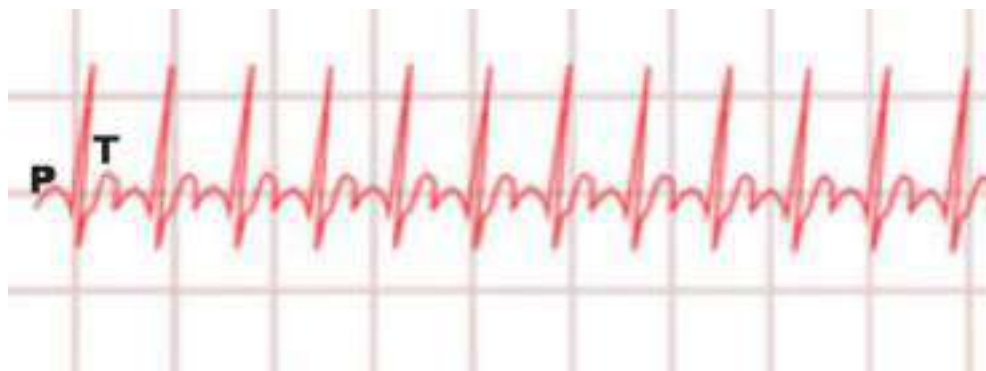
(b) Which type of aestivation is shown in the calyx of the flower?

OR

Name the type of stamens on the basis of their attachment.

(c) Write the floral formula for the given flower.

30. Given below is the ECG of a person recorded for six seconds. Examine it and answer the questions that follow:



- (a) Which tissue is responsible for the electrical activity of the heart?
(b) What does the P- wave represent?

OR

What does the T- wave represent?

- (c) How is the heart beat rate determined based on ECG? Calculate the heart beat rate of the individual whose ECG is given above.

SECTION E

31. (a) Name the monomeric proteins which constitute the anisotropic band in a muscle fibre.
(b) Draw the structure of the filament which is responsible for shortening of the I band during muscle contraction.
(c) State the role of the following in muscle contraction:
(i) Ca^{2+}
(ii) ATP

OR

- (a) Name the two iodothyronine hormones.
(b) Give a diagrammatic representation of the mechanism of action of iodothyronine hormones.
(c) If a pregnant lady takes an iodine-deficient diet, how will it affect her and the developing foetus?

32. (a) Which pathway is common in both aerobic and anaerobic respiration in plants?
(b) Give the schematic representation of the above pathway.

OR

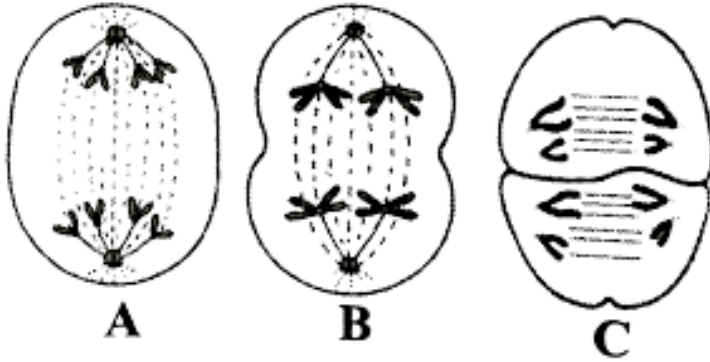
- (a) Which photosynthetic pathway is common to both C3 and C4 plants? Mention the location of occurrence of this pathway in both C3 and C4 plants.
(b) Give the schematic representation of the above pathway.

33. (a) 'The events taking place during prophase are opposite to those taking place in telophase.' Justify.

(b) If a tissue has at a given time 256 cells, how many cycles of mitosis had the original parental single cell undergone?

OR

(a) Identify the mitotic and meiotic division stages depicted in the diagrams A, B and C. Give reason in support of your answer.



(b) State the ploidy and number of chromosomes in daughter cells formed in A and B.

BIOLOGY (044) CLASS XI SAMPLE PAPER

Marking Scheme

(Marking scheme and Hints to solution)

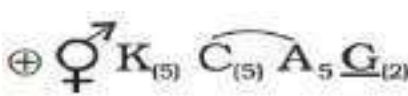
Note: (Any other relevant answer not given here in but given by the candidate be also suitably awarded)

Q.No.	Value Points / Key points	Marks allotted to each value point/key point	Total marks								
1	(d) Anaphase II	1	1								
2	(b) A-iii, B-iv, C-i, D-ii	1	1								
3	(c) <i>Salvia</i> and Mustard	1	1								
4	<table border="1" style="width: 100%;"><thead><tr><th></th><th><u>Ammonotelic</u></th><th><u>Ureotelic</u></th><th><u>Uricotelic</u></th></tr></thead><tbody><tr><td>(b)</td><td>Aquatic amphibians</td><td>Frog, horse</td><td>Grasshopper, eagle</td></tr></tbody></table>		<u>Ammonotelic</u>	<u>Ureotelic</u>	<u>Uricotelic</u>	(b)	Aquatic amphibians	Frog, horse	Grasshopper, eagle	1	1
	<u>Ammonotelic</u>	<u>Ureotelic</u>	<u>Uricotelic</u>								
(b)	Aquatic amphibians	Frog, horse	Grasshopper, eagle								
5	(b) bacteria and cytoplasm of human cell	1	1								
6	(b) A – Pseudocoelomate; B – Acoelomate; C – True coelomate	1	1								
7	(c) group of organisms belonging to related families	1	1								
8	(d) <i>Euglena</i> belonging to Kingdom Protista acts like a predator of small organisms in the absence of light.	1	1								
9	(c) During spore formation	1	1								
10	(a) A-Ilium, B- Ischium, C- Femur, D- Tibia, E- Fibula	1	1								
11	(d) Cerebellum- maintains posture, regulates intersensory association and communication	1	1								

12	(d) mother is Rh- and foetus is Rh+	1	1
13	c. A is true but R is false.	1	1
14	c. A is true but R is false.	1	1
15	b. Both A and R are true and R is not the correct explanation of A.	1	1
16	a. Both A and R are true and R is the correct explanation of A.	1	1

17	Spirogyra- Pigment- chla,b Stored food- Starch <i>Gelidium</i> - Pigment- phycoerythrin, chla,d Stored food- Floridean starch	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
18	a. Collagen b. Enzyme c. Insulin (or any other protein hormone) d. Enable glucose transport into cells	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
19	(i) Definition/ any difference (ii) Difference in vasa recta. (Any one difference) Difference in loop of Henle OR Difference Motor end plate- Neuron and muscle Chemical Synapse- Neuron and neuron Similarity Neurotransmitter/ Acetyl choline	1 1 1 1	2

20	<p>Potato spindle —Causative agent - Viroid</p> <p>Tobaaco mosaic - Virus</p> <p>Any one difference in structure</p>	<p>½</p> <p>½</p> <p>1</p>	2
21	<p>(a) Cotton and peanut</p> <p>(b) RuBisCO</p>	<p>½+ ½</p> <p>1</p>	2
22	<ul style="list-style-type: none"> • Axonal membrane impermeable to Na⁺ ⇒ High conc. of Na⁺ outside axon • More permeable to K⁺ ⇒ High conc. of K⁺ inside axon • Na-K pumps transfer 3 Na⁺ outside for 2 K⁺ inside • Axon membrane is negatively charged on the inner surface and positively charged on the outer surface. Therefore, polarised 	<p>½</p> <p>½</p> <p>½ + ½</p> <p>½ + ½</p>	3
23	<p>(a) X- Presence of enzyme</p> <p>(b) by reducing activation energy</p> <p>(c) Exothermic, energy of product less than that of substrate.</p>	<p>1</p> <p>1</p> <p>½+½</p>	3
24	<ul style="list-style-type: none"> ● (a) Plasmogamy -Elaborate ● (b) Karyogamy-Elaborate ● (c) Meiosis –Elaborate 	<p>½+½</p> <p>½+½</p> <p>½+½</p>	3
25	<p>(a) Dorsiventral leaf- contain well defined dorsal and ventral sides/mesophyll differentiated into palisade and spongy parenchyma</p> <p>Isobilateral leaf- similar in appearance on both the sides/Mesophyll is not differentiated into palisade and spongy parenchyma.</p> <p>(b) A - hypogynous</p>	<p>1</p> <p>1</p> <p>½</p>	

	B- Epigynous	1/2	3
26	(a) Apical bud removed, lateral bud grows (b) promotes female flowers, increases yield (c) Apple fruits elongates/shape improved fruits can be left on trees longer/ extending market period	1/2+1/2 1/2+1/2 1/2 1/2	3
27	i) Echinodermata- locomotion/ respiration/ food capture (any) (ii) Mollusca- feeding (iii) Annelida - locomotion	1/2 + 1/2 1/2+1/2 1/2+1/2	3
28	(a) ER, Golgi complex, lysosomes and vacuoles. (b) Functions are coordinated.	1/2 x 4 1	3
29	(a) Axile. b) Valvate OR Epipetalous c) 	1 1 2	4
30	(a) Nodal tissue/SA node (b) Atrial excitation OR Ventricular repolarisation (c) By counting no. of QRS complexes in the given time period. 6 minutes - 12 QRS 60 minutes - 12 X 10= 120 QRS/ heart beat rate	1 1 1 1/2 1/2	4
31	a. Meromyosin b. Thin filament (diagram)	1 1/2	

	<p>Labelling: Troponin</p> <p>Tropomyosin</p> <p>F actin</p> <p>c. Ca ions: binds to troponin subunit of actin filament, unmask active site for myosin</p> <p>ATP: binds to myosin head, which forms cross bridge with actin active site</p> <p style="text-align: center;">OR</p> <p>a. Tetraiodothyronine/ Thyroxine, Triiodothyronine b. Fig 19.5, Pg 249, NCERT Textbook Class XI c. Hypothyroidism</p> <p>-defective development & maturation of baby/stunted growth/ mental retardation/ low IQ (any two)</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2+1/2</p> <p>1/2+1/2</p> <p>OR</p> <p>1/2+1/2</p> <p>1/2 (diag.)</p> <p>1/2X4 (labels)</p> <p>1/2</p> <p>1/2+1/2</p>	5
32	<p>a. Glycolysis</p> <p>b. Fig 12.1, Pg No 156, NCERT Text book Class XI</p> <p style="text-align: center;">OR</p> <p>a. Calvin Pathway</p> <p>C3 - mesophyll cells</p> <p>C4 - Bundle sheath cells</p> <p>b. Fig 11.8, Pg no. 144, NCERT Textbook Class XI</p>	<p>1/2</p> <p>4 1/2</p> <p>Or</p> <p>1</p> <p>1/2</p> <p>1/2</p> <p>3 (1 mark for each step)</p>	5
33	<p>a. Prophase:</p> <ol style="list-style-type: none"> 1. Chromosomal material condenses 2. Nucleolus, Golgi, ER disappear 3. Nuclear membrane begins to disappear. <p>Telophase:</p> <ol style="list-style-type: none"> 1. Chromosome lose their identity 2. Nucleolus, Golgi, ER reform 3. Nuclear membrane reforms <p>b. 1- 2-4-8-16-32-64-128-256</p>	<p>1 X 3</p> <p>1</p>	

	<p>8 divisions</p> <p>OR</p> <p>a.A- Anaphase of mitosis, Sister chromatids separate</p> <p>B- Anaphase I of meiosis, Homologous chromosomes separate</p> <p>C- Anaphase II of meiosis, Sister chromatids of dyad separate</p> <p>b. A- 2n, 4 chromosomes</p> <p>B - n, 2 chromosomes</p>	<p>1</p> <p>OR</p> <p>$\frac{1}{2}+\frac{1}{2}$</p> <p>$\frac{1}{2}+\frac{1}{2}$</p> <p>$\frac{1}{2}+\frac{1}{2}$</p> <p>$\frac{1}{2}+\frac{1}{2}$</p> <p>$\frac{1}{2}+\frac{1}{2}$</p>	<p>5</p>
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Sample Paper – 2024-25		
Accountancy		
Class – XI		
	Time allowed: 3 Hours	Max. Marks: 80
	<p>General Instructions</p> <ol style="list-style-type: none"> 1. Question Paper is divided into two parts. Part – A (56 Marks) and Part – B (24 Marks) 2. Both parts are compulsory 3. All parts of the question should be attempted at one place. 4. Write down the question number clearly before attempting the question 5. 25% of the marks allotted to the question would be deducted for not using correct format, narrations and working notes. 6. Nothing should be written on the Question paper 7. Scheme of choice <ol style="list-style-type: none"> i. 1 Mark – 7 questions (2 from unit 1, 4 from unit 2 and 1 from unit 3) ii. 3 Mark – 2 questions (1 from unit 1 and 1 from unit 2) iii. 4 Mark – 1 question (1 from unit 2) iv. 6 Mark – 2 questions (1 from unit 2 and 1 from unit 3) 	
Q.No.	PART – A	Marks
1	IND-AS are issued by _____ a) Ministry of Commerce b) Ministry of Finance c) Reserve Bank of India d) Institute of Chartered Accountants of India	1
2	If the supplier of goods and services and the place of supply are in two different states, which of the following types of GST is levied? a) IGST b) SGST c) CGST d) Both CGST and SGST	1
3	Bank Reconciliation Statement is _____ a) An account b) Subsidiary book c) Bank column of the Cash book d) A statement made to reconcile Cash book and Pass book Balances	1
4 A	Which of the following will not be recorded in the books of accounts: a) Introduction of capital by the proprietor b) Purchase of goods on credit c) Death of manager of the enterprise d) Withdrawal of goods by the proprietor	1
Or		
4 B	Which of the following is not qualitative characteristic of accounting information? a) Understandability b) Cash flow statement c) Relevance d) Reliability	1

5 A	<p>In a financial year, Vinod had total sales of ₹ 7,40,000, out of which ₹ 5,60,000 were received in cash. Total expenses paid by him were ₹ 2,70,000, out of which ₹ 30,000 belongs to next year and ₹ 10,000 are still outstanding. Determine Vinod's income for the year as per Cash Basis of Accounting:</p> <p>a) ₹ 2,90,000 b) ₹ 3,80,000 c) ₹ 3,90,000 d) ₹ 4,70,000</p>	1
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Or

5 B	<p>Which of the following is not the advantage of Accrual basis of accounting:</p> <p>a) It is more scientific b) It shows a complete picture of the financial transactions of the business c) It reflects true profit or loss during the accounting period and, therefore, has wide acceptability. d) It is a simple basis of accounting</p>	1
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6	<p>Match the following:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%; text-align: center;">Column 1</th> <th style="width: 50%; text-align: center;">Column 2</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <p>A. Revenue expenditure B. Increase in asset and increase in liability C. Goods means _____ D. Increase in asset and increase in owners' capital</p> </td> <td style="vertical-align: top;"> <p>1. Commodity to bought and sold 2. Capital introduced by the proprietor 3. Purchase of machinery on credit 4. Repair expenses</p> </td> </tr> </tbody> </table> <p>Options:</p> <p>a) A1, B2, C3, D4 b) A4, B3, C1, D2 c) A2, B3, C4, D1 d) A2, B1, C3, D4</p>	Column 1	Column 2	<p>A. Revenue expenditure B. Increase in asset and increase in liability C. Goods means _____ D. Increase in asset and increase in owners' capital</p>	<p>1. Commodity to bought and sold 2. Capital introduced by the proprietor 3. Purchase of machinery on credit 4. Repair expenses</p>	1
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7	<p>Identify the source document from the given picture</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Options:</p> <p>a) Cash memo b) Pay-In slip c) Invoice d) Receipt</p>	1
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8	The words 'To Balance b/d' and 'By Balance b/d' are recorded in the Particulars Column at the time of posting of _____ a) Compound entries b) Adjusting entries c) Opening entries d) Closing entries	1
9	Debit means _____ a) An increase in asset b) An increase in liability c) An increase in Proprietors equity d) Decrease in asset	1
10	Accrued commission is _____ a) Liability b) Asset c) Expense d) Income	1
11	Imprest amount ₹10,000. What will be the amount of reimbursement if the following expenses were incurred by the petty cashier during the month. Wages ₹2,900, refreshment ₹2,100, repairs ₹1,000, general expenses ₹800 a) ₹2,200 b) ₹6,800 c) ₹5,000 d) ₹6,000	1
12 A	Assertion (A): Cash discount allowed is an expense and is shown separately in the books of accounts Reason (R): Cash discount is allowed on timely receipt of due amount and thus is an indirect expense of the firm Which of the following is correct? a) Both A and R are correct and R is the correct explanation of A b) Both A and R are correct but R is not the correct explanation of A c) A is True but R is False d) A is False but R is True	1
Or		
12 B	Assertion (A): Commission received is an income for the firm and thus has a credit balance Reason (R): Commission receivable a/c is an asset a/c and thus has a credit balance. Which of the following is correct? a) Both A and R are correct and R is the correct explanation of A b) Both A and R are correct but R is not the correct explanation of A c) A is True but R is False d) A is False but R is True	1
13 A	A machinery which costs Rs. 2,00,000 is depreciated at 25% per year using the Written Down Value Method. At the end of three years, it will have a net book value of a) Rs. 1,50,000. b) Rs. 84,375. c) Rs. 1,12,500 d) Rs. 1,00,000.	1

	Or	
13 B	The term amortisation is used to write off _____ a) Fixed Assets. b) Intangible Assets. c) Tangible Assets. d) Wasting Assets.	1
14 A	Assertion (A): In case of Sales return, the firm receives a debit note Reason (R): Because the customer is debiting firm's a/c with the value of goods returned Which of the following is correct? a) Both A and R are correct and R is the correct explanation of A b) Both A and R are correct but R is not the correct explanation of A c) A is True but R is False d) A is False but R is True	1
	Or	
14 B	Paid to Jigyasa ₹11,500 in full settlement of ₹12,000 posting will be made in Jigyasa's a/c _____ a) ₹12,000 debit side b) ₹12,000 on credit side c) ₹11,500 on debit side d) ₹11,500 on credit side	1
15 A	Purchase of Office furniture for ₹5,000 was debited to the general expenses a/c. It is _____ a) Error of Omission b) Error of Commission c) Error of Principle d) Compensating Error	1
	Or	
15 B	Sales Book is totalled as ₹50,000 instead of ₹5,00,000. It is _____ a) Error of Omission b) Error of Commission c) Error of Principle d) Compensating Error	1
16 A	Mr. Nirbhay started business for buying and selling of Readymade garments with ₹8,00,000 as initial investment. Out of this, he paid ₹4,00,000 for the purchase of garments and ₹50,000 for furniture and ₹50,000 for computers, the remaining amount was deposited in the bank. He sold some of the ladies and kids garments for ₹3,00,000 (Cash) and some garments for ₹1,50,000 to Mr. Utsav He bought men's garments of ₹2,00,000 from Mr. Lakshay. Electricity bill ₹7,000 and telephone bill ₹3,000 is paid. Nirbhay gifted men's garments of ₹2,000 to his brother on his birthday. He took out ₹5,000 for his domestic use from bank. Calculate 1. Amount of Fixed assets 2. Identify the creditor and state the amount payable to him 3. Calculate 'Expenses'	3
	Or	
16 B	Mr. Nirbhay started business for buying and selling of Readymade garments with ₹8,00,000 as initial investment. Out of this, he paid ₹4,00,000 for the purchase of garments and ₹50,000 for furniture and ₹50,000 for computers, the remaining amount was deposited in the bank. He sold some of the ladies and kids garments for ₹3,00,000 (Cash) and some garments for ₹1,50,000 to Mr. Utsav	3

	<p>He bought men's garments of ₹2,00,000 from Mr. Lakshay. Electricity bill ₹7,000 and telephone bill ₹3,000 is paid. Nirbhay gifted men's garments of ₹2,000 to his brother on his birthday. He took out ₹5,000 for his domestic use from bank.</p> <p>Calculate</p> <ol style="list-style-type: none"> 1. Total 'Purchases' 2. Identify the debtors and the amount receivable 3. Calculate 'Drawings' 																																		
17 A	<p>Prepare a suspense account for the following errors :</p> <p>(a) Credit purchases from Rohan ₹9,000 were posted to the debit of Gobind as ₹10,000. (b) Goods returned to Rakesh ₹4,000 were posted to the credit of Naresh as ₹3,000. (c) Cash sales ₹2,000 were posted to commission account as ₹200.</p>	3																																	
Or																																			
17 B	<p>Rectify the following errors :</p> <ol style="list-style-type: none"> 1. Credit sales to Gopal ₹10,000 were recorded in Purchases Book. However, Gopal's account was correctly debited. 2. A sum of ₹800 written off as depreciation on Machinery, were not posted to Depreciation A/c. 3. Payment of ₹500 to Mohan and ₹600 to Sohan was made but Mohan was debited with ₹600 and Sohan with ₹500. 	3																																	
18	<p>Show the effect of the following transactions on the Accounting Equation of Nysha</p> <ol style="list-style-type: none"> 1. The following balances appeared in the books of Ankur on 1/4/2024 Cash - ₹20,000, Bank ₹30,000, Stock ₹10,000, Sunil (Dr.) ₹15,000 and Shekhar (Cr.) ₹15,000 2. Payment made through cheque in full settlement of account ₹14,800 to the creditor 3. Sale of goods on credit to Manoj costing ₹5,000 at a profit of 60% 	3																																	
19	<p>Prepare the correct Trial Balance from the following trial balance in which there are certain mistakes.</p> <p style="text-align: center;">Books of Nandini Trial Balance As at 31/3/2024</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Account Head</th> <th style="text-align: center;">Debit Balance</th> <th style="text-align: center;">Credit Balance</th> </tr> </thead> <tbody> <tr> <td>Adjusted Purchases</td> <td style="text-align: right;">1,50,000</td> <td></td> </tr> <tr> <td>Closing Stock</td> <td></td> <td style="text-align: right;">40,000</td> </tr> <tr> <td>Debtors</td> <td></td> <td style="text-align: right;">60,000</td> </tr> <tr> <td>Creditors</td> <td></td> <td style="text-align: right;">30,000</td> </tr> <tr> <td>Fixed assets</td> <td style="text-align: right;">50,000</td> <td></td> </tr> <tr> <td>Opening Stock</td> <td style="text-align: right;">60,000</td> <td></td> </tr> <tr> <td>Expenses</td> <td></td> <td style="text-align: right;">20,000</td> </tr> <tr> <td>Sales</td> <td></td> <td style="text-align: right;">2,00,000</td> </tr> <tr> <td>Capital</td> <td style="text-align: right;">90,000</td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;">3,50,000</td> <td style="text-align: right;">3,50,000</td> </tr> </tbody> </table>	Account Head	Debit Balance	Credit Balance	Adjusted Purchases	1,50,000		Closing Stock		40,000	Debtors		60,000	Creditors		30,000	Fixed assets	50,000		Opening Stock	60,000		Expenses		20,000	Sales		2,00,000	Capital	90,000			3,50,000	3,50,000	3
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20	<p>Identify the types of Reserves from the following:</p> <ol style="list-style-type: none"> 1. Dividend equalization reserve 2. Reserve for meeting any unforeseen contingencies 3. Workmen compensation reserve 4. Gain on sale of Fixed assets 5. Reserve created by charging excessive depreciation 6. Profit/Gain earned on acquisition of another business/entity 	3																																	

21	<p>Identify and explain the Accounting Principles/Concepts/Conventions followed or violated in the following situations:</p> <ol style="list-style-type: none"> 1. Amar Ltd has a production unit of mobiles. It supplied mobiles to Sagar (a retailer) on credit for ₹3,00,000. Sagar became insolvent and there is every chance of not recovering the money in future. Amar Ltd provides for this loss in the books of accounts. 2. Sunil is running a stationery business under the name 'Rainbow Stationers'. It invested ₹50,000 as initial investment. It purchased stationery for ₹30,000 and deposited rest of the money in bank. Sunil withdraws ₹10,000 for his domestic use and recorded it as business expenses. 	4
22 A	<p>Prepare Bank Reconciliation Statement of Ram as on January, 2024:</p> <ol style="list-style-type: none"> (i) Debit balance as per Bank Pass Book as on the date is ₹ 41,000. (ii) Cheque of ₹ 15,600 were drawn on 27th January, 2024. Out of which cheques for ₹ 11,000 were encashed up to January, 2024 (iii) A cheque for ₹ 1,000 was returned dishonored by the bank and was debited in the pass book only. (iv) A Wrong debit of ₹ 800 has been given by the bank in the bank pass book. 	4
Or		
22 B	<p>From the following information provided by Shyam, Prepare Bank Reconciliation Statement as on 30th November, 2023:</p> <ol style="list-style-type: none"> (i) Credit balance as per Bank Cash Book as on the date is ₹ 45,000. (ii) Cheque amounted to ₹ 60,000 sent to bank for collection, which though entered in the cash book have not credited by the bank. (iii) Wrong credit for ₹ 10,000 was given by bank on 29th November and reversed it on 10th December, 2023 (iv) A cheque for ₹ 7,500 drawn on his savings account has been shown as drawn on his current account in Cash Book 	4
23	<p>On 1st April, 2021, Veera Ltd. purchased a machinery for Rs.2,50,000 and spent Rs.50,000 on its installation. On 1st July, 2023, $\frac{1}{3}$rd of machinery purchased on 1st April, 2021 was sold for Rs. 15,000 and a new machinery at the cost of Rs.2,00,000 was purchased on the same date. The company has adopted the method of providing depreciation @ 15% p.a. on straight line method.</p> <p>Show the machinery account, provision for depreciation account and machinery disposal account for three years ended on 31st March, 2022 to 31st March, 2024.</p>	6
24	<p>Record the following transactions in the Cash book of 'Dev Traders' (Journal proper is also required)</p> <p>2024</p> <p>July 1 – Cash in hand ₹31,200 and Overdraft at bank ₹7,400</p> <p>July 2 – Purchased goods on credit from Garvit of list price ₹15,000 less TD 20% and CGST and SGST @6% each</p> <p>July 5 – Settled the account of Garvit by paying cash ₹13,000</p> <p>July 7 – Cashed a cheque for ₹7,500</p> <p>July 8 – Received from Anika on behalf of Bhavya ₹2,200</p> <p>July 10 – Interest debited by bank ₹650</p> <p>July 15 – Deposited with the bank the entire balance after retaining ₹5000 at office</p>	6

25 A	<p>Give the journal entries corresponding to the narration given below in the books of Siya :</p> <table border="1" data-bbox="305 159 1369 1087"> <thead> <tr> <th data-bbox="305 159 435 226">Date</th> <th data-bbox="435 159 1057 226">Particulars</th> <th data-bbox="1057 159 1109 226">L. F.</th> <th data-bbox="1109 159 1235 226">Amount Dr.</th> <th data-bbox="1235 159 1369 226">Amount Cr.</th> </tr> </thead> <tbody> <tr> <td data-bbox="305 226 435 428">2024 April 3</td> <td data-bbox="435 226 1057 428"> <p style="text-align: right;">Dr.</p> <p>To</p> <p>To</p> <p>(Goods of the list price of Rs.8,000 purchased at 20% Trade discount and 5% Cash discount)</p> </td> <td data-bbox="1057 226 1109 428"></td> <td data-bbox="1109 226 1235 428" style="text-align: right;">₹</td> <td data-bbox="1235 226 1369 428" style="text-align: right;">₹</td> </tr> <tr> <td data-bbox="305 428 435 579">April 8</td> <td data-bbox="435 428 1057 579"> <p style="text-align: right;">Dr.</p> <p>To</p> <p>(Goods costing Rs. 15,000 sold at a profit of $33\frac{1}{3}\%$ on cost)</p> </td> <td data-bbox="1057 428 1109 579"></td> <td data-bbox="1109 428 1235 579"></td> <td data-bbox="1235 428 1369 579"></td> </tr> <tr> <td data-bbox="305 579 435 680">April 10</td> <td data-bbox="435 579 1057 680"> <p style="text-align: right;">Dr.</p> <p>To</p> <p>(Goods costing Rs.4,000 destroyed by fire)</p> </td> <td data-bbox="1057 579 1109 680"></td> <td data-bbox="1109 579 1235 680"></td> <td data-bbox="1235 579 1369 680"></td> </tr> <tr> <td data-bbox="305 680 435 781">April 16</td> <td data-bbox="435 680 1057 781"> <p>(Plant purchased for Rs. 1,00,000 and installation charges paid Rs.2,000)</p> </td> <td data-bbox="1057 680 1109 781"></td> <td data-bbox="1109 680 1235 781"></td> <td data-bbox="1235 680 1369 781"></td> </tr> <tr> <td data-bbox="305 781 435 949">April 20</td> <td data-bbox="435 781 1057 949"> <p>Bank A/c Dr.</p> <p style="padding-left: 20px;">A/c Dr.</p> <p style="text-align: right;">To</p> <p>(40 paise per rupee received from the estate of Mohan on his insolvency)</p> </td> <td data-bbox="1057 781 1109 949"></td> <td data-bbox="1109 781 1235 949" style="text-align: right;">3,000</td> <td data-bbox="1235 781 1369 949"></td> </tr> <tr> <td data-bbox="305 949 435 1087">April 30</td> <td data-bbox="435 949 1057 1087"> <p style="text-align: right;">Dr.</p> <p>To</p> <p>To</p> <p>(Salary paid Rs.40,000 and due Rs. 10,000)</p> </td> <td data-bbox="1057 949 1109 1087"></td> <td data-bbox="1109 949 1235 1087"></td> <td data-bbox="1235 949 1369 1087"></td> </tr> </tbody> </table>	Date	Particulars	L. F.	Amount Dr.	Amount Cr.	2024 April 3	<p style="text-align: right;">Dr.</p> <p>To</p> <p>To</p> <p>(Goods of the list price of Rs.8,000 purchased at 20% Trade discount and 5% Cash discount)</p>		₹	₹	April 8	<p style="text-align: right;">Dr.</p> <p>To</p> <p>(Goods costing Rs. 15,000 sold at a profit of $33\frac{1}{3}\%$ on cost)</p>				April 10	<p style="text-align: right;">Dr.</p> <p>To</p> <p>(Goods costing Rs.4,000 destroyed by fire)</p>				April 16	<p>(Plant purchased for Rs. 1,00,000 and installation charges paid Rs.2,000)</p>				April 20	<p>Bank A/c Dr.</p> <p style="padding-left: 20px;">A/c Dr.</p> <p style="text-align: right;">To</p> <p>(40 paise per rupee received from the estate of Mohan on his insolvency)</p>		3,000		April 30	<p style="text-align: right;">Dr.</p> <p>To</p> <p>To</p> <p>(Salary paid Rs.40,000 and due Rs. 10,000)</p>				6
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25 B	<p>From the following transactions prepare Sales Return Book of M/s Keshav & Co., Kolkata (West Bengal) assuming CGST @ 9% and SGST @ 9% and post it into the Ledger (Sita Ram, Hind Oil Co. and Gujarat Gas Co.) :—</p> <table border="1" data-bbox="305 1268 1369 1470"> <thead> <tr> <th data-bbox="305 1268 423 1304">2024</th> <th data-bbox="423 1268 1369 1304"></th> </tr> </thead> <tbody> <tr> <td data-bbox="305 1304 423 1371">June 3</td> <td data-bbox="423 1304 1369 1371">Goods returned by Sita Ram. Kolkata Rs.80,000. These goods were sold to him at 15% discount.</td> </tr> <tr> <td data-bbox="305 1371 423 1402">12</td> <td data-bbox="423 1371 1369 1402">Defective goods returned by Hind Oil Co., Hyderabad (Telangana) for Rs.30,000.</td> </tr> <tr> <td data-bbox="305 1402 423 1470">26</td> <td data-bbox="423 1402 1369 1470">Allowances claimed by Gujarat Gas Co., Ahmedabad on Account of Mistake in invoice Rs.20,000.</td> </tr> </tbody> </table>	2024		June 3	Goods returned by Sita Ram. Kolkata Rs.80,000. These goods were sold to him at 15% discount.	12	Defective goods returned by Hind Oil Co., Hyderabad (Telangana) for Rs.30,000.	26	Allowances claimed by Gujarat Gas Co., Ahmedabad on Account of Mistake in invoice Rs.20,000.	6																											
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26	<p>Arrange the following Assets in the order of 'Liquidity'</p> <ol style="list-style-type: none"> 1. Debtors 2. Stock 3. Short term investment 4. Cash at Bank <p>Options:</p> <ol style="list-style-type: none"> a) 4,3,1,2 b) 1,2,3,4 c) 4,3,2,1 d) 3,4,1,2 	1																																			

27	<p>Calculate Sales form the following:</p> <p>I. Gross Profit is 25% on Sales</p> <p>II. Cost of Goods Sold is ₹ 3,00,000</p> <p>Options</p> <p>a) ₹2,25,000</p> <p>b) ₹3,00,000</p> <p>c) ₹3,75,000</p> <p>d) ₹4,00,000</p>	1																									
28	<p>Single entry system is usually adopted by?</p> <p>a) Small proprietary or partnership firms</p> <p>b) Joint stock companies</p> <p>c) Banks</p> <p>d) Co-operative societies</p>	1																									
29	<p>Gross Profit = ₹50,000</p> <p>Indirect expenses = ₹35,000</p> <p>Direct expenses = ₹5,000</p> <p>The Journal entry for Net Profit will be: (Choose the correct option)</p> <table border="1" data-bbox="305 762 1377 1104"> <thead> <tr> <th>S.No.</th> <th>Particulars</th> <th>L.F.</th> <th>Debit ₹</th> <th>Credit ₹</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Profit & Loss a/c To Net Profit</td> <td>Dr</td> <td>15,000</td> <td>15,000</td> </tr> <tr> <td>b</td> <td>Net Profit To Capital a/c</td> <td>Dr</td> <td>10,000</td> <td>10,000</td> </tr> <tr> <td>c</td> <td>Profit & Loss a/c To Capital a/c</td> <td>Dr</td> <td>15,000</td> <td>15,000</td> </tr> <tr> <td>d</td> <td>Profit & Loss a/c To Capital a/c</td> <td>Dr</td> <td>10,000</td> <td>10,000</td> </tr> </tbody> </table>	S.No.	Particulars	L.F.	Debit ₹	Credit ₹	a	Profit & Loss a/c To Net Profit	Dr	15,000	15,000	b	Net Profit To Capital a/c	Dr	10,000	10,000	c	Profit & Loss a/c To Capital a/c	Dr	15,000	15,000	d	Profit & Loss a/c To Capital a/c	Dr	10,000	10,000	1
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30 A	<p>Differentiate between Double Entry System and Single Entry System on the basis of 'Trial Balance'</p>	1																									
Or																											
30 B	<p>Differentiate between Double Entry System and Single Entry System on the basis of 'Authenticity'</p>	1																									
31	<p>In a burglary at the godown of Tapan on the night of 14th July, 2024, part of the stock was stolen.</p> <p>From the following particulars, find out the estimated value of loss of stock by theft:</p> <p style="text-align: center;">₹</p> <table data-bbox="305 1539 1027 1671"> <tbody> <tr> <td>Stock on 1st April, 2024</td> <td style="text-align: right;">60,000</td> </tr> <tr> <td>Purchases from 1st April to 14th July, 2024</td> <td style="text-align: right;">4,10,000</td> </tr> <tr> <td>Sales from 1st April to 14th July, 2024</td> <td style="text-align: right;">6,00,000</td> </tr> <tr> <td>Stock remaining after burglary</td> <td style="text-align: right;">12,000</td> </tr> </tbody> </table> <p>The normal rate of gross profit for his business is 30% of selling price.</p>	Stock on 1st April, 2024	60,000	Purchases from 1st April to 14th July, 2024	4,10,000	Sales from 1st April to 14th July, 2024	6,00,000	Stock remaining after burglary	12,000	3																	
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32	<p>Following is the extract from the Trial Balance of a firm as at 31st March, 2024:</p> <p style="text-align: center;">TRIAL BALANCE As at 31st March, 2024</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Heads of Accounts</th> <th style="width: 5%;">L.F.</th> <th style="width: 15%;">Dr.(₹)</th> <th style="width: 10%;">Cr. (₹)</th> </tr> </thead> <tbody> <tr> <td>Sales</td> <td></td> <td></td> <td style="text-align: right;">5,00,000</td> </tr> <tr> <td>Opening Stock</td> <td></td> <td style="text-align: right;">30,000</td> <td></td> </tr> <tr> <td>Advertising expenses</td> <td></td> <td style="text-align: right;">5,000</td> <td></td> </tr> <tr> <td>Discount allowed</td> <td></td> <td style="text-align: right;">2,000</td> <td></td> </tr> <tr> <td>Loss by accident</td> <td></td> <td style="text-align: right;">3,000</td> <td></td> </tr> <tr> <td>Interest on long term debt</td> <td></td> <td style="text-align: right;">2,000</td> <td></td> </tr> <tr> <td>Commission received</td> <td></td> <td></td> <td style="text-align: right;">4,500</td> </tr> <tr> <td>Gain on sale of Land</td> <td></td> <td></td> <td style="text-align: right;">10,000</td> </tr> </tbody> </table> <p>Additional Information:</p> <p>(i) Gross Profit = 25% of Cost of Goods sold</p> <p>(ii) Closing Stock = ₹50,000</p> <p>From the above information calculate the following:</p> <ol style="list-style-type: none"> 1. Gross profit 2. Operating Profit 3. Net Profit 	Heads of Accounts	L.F.	Dr.(₹)	Cr. (₹)	Sales			5,00,000	Opening Stock		30,000		Advertising expenses		5,000		Discount allowed		2,000		Loss by accident		3,000		Interest on long term debt		2,000		Commission received			4,500	Gain on sale of Land			10,000	4												
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33	<p>Anika does not keep her records in systematic manner. She gives you the following information:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 50%;">Particulars</th> <th style="width: 25%;">1/4/23 ₹</th> <th style="width: 25%;">31/3/24 ₹</th> </tr> </thead> <tbody> <tr> <td>Cash in hand</td> <td>8,000</td> <td>35,000</td> </tr> <tr> <td>Cash at Bank</td> <td>15,000</td> <td>25,000</td> </tr> <tr> <td>Debtors</td> <td>1,35,000</td> <td>1,65,000</td> </tr> <tr> <td>Stock in trade</td> <td>3,52,000</td> <td>3,45,000</td> </tr> <tr> <td>Office equipment</td> <td>50,000</td> <td>50,000</td> </tr> <tr> <td>Creditors</td> <td>2,50,000</td> <td>2,10,000</td> </tr> <tr> <td>Furniture</td> <td>40,000</td> <td>40,000</td> </tr> </tbody> </table> <p>You are given the following additional information:</p> <ul style="list-style-type: none"> ➤ Anika withdrew ₹6,000 per month during the year ➤ She sold her personal investments of ₹30,000 at 105% and brought that money into the business ➤ Write off depreciation on furniture and office equipment @10% p.a. each <p>Calculate the profit made during the year ended 31/3/24 using 'Statement of Affairs' Method.</p>	Particulars	1/4/23 ₹	31/3/24 ₹	Cash in hand	8,000	35,000	Cash at Bank	15,000	25,000	Debtors	1,35,000	1,65,000	Stock in trade	3,52,000	3,45,000	Office equipment	50,000	50,000	Creditors	2,50,000	2,10,000	Furniture	40,000	40,000	6																								
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34 A	<p>From the following balances taken from the books of Mehul, prepare Trading and Profit & Loss a/c for the year ended 31/3/2024</p> <p style="text-align: center;">Trial Balance as at 31/3/2024</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Debit balances</th> <th style="width: 10%;">₹</th> <th style="width: 35%;">Credit balances</th> <th style="width: 10%;">₹</th> </tr> </thead> <tbody> <tr> <td>Household expenses</td> <td style="text-align: right;">20,000</td> <td>Capital</td> <td style="text-align: right;">5,00,000</td> </tr> <tr> <td>Opening stock</td> <td style="text-align: right;">45,000</td> <td>Sales</td> <td style="text-align: right;">8,10,000</td> </tr> <tr> <td>Purchases</td> <td style="text-align: right;">2,15,000</td> <td>Provision for doubtful debts</td> <td style="text-align: right;">12,000</td> </tr> <tr> <td>Manufacturing wages</td> <td style="text-align: right;">60,000</td> <td>Commission received</td> <td style="text-align: right;">8,000</td> </tr> <tr> <td>Fuel and power</td> <td style="text-align: right;">1,25,500</td> <td>Bills payable</td> <td style="text-align: right;">15,000</td> </tr> <tr> <td>Salaries</td> <td style="text-align: right;">1,32,000</td> <td>Creditors</td> <td style="text-align: right;">70,000</td> </tr> <tr> <td>Bad debts</td> <td style="text-align: right;">10,000</td> <td>Interest on loan to Rishabh</td> <td style="text-align: right;">9,000</td> </tr> <tr> <td>Bills receivable</td> <td style="text-align: right;">12,000</td> <td>Manufacturing wages</td> <td></td> </tr> <tr> <td>Debtors</td> <td style="text-align: right;">91,000</td> <td>outstanding</td> <td style="text-align: right;">25,000</td> </tr> <tr> <td>Carriage inwards</td> <td style="text-align: right;">9,500</td> <td></td> <td></td> </tr> <tr> <td>Rent</td> <td style="text-align: right;">44,000</td> <td></td> <td></td> </tr> </tbody> </table>	Debit balances	₹	Credit balances	₹	Household expenses	20,000	Capital	5,00,000	Opening stock	45,000	Sales	8,10,000	Purchases	2,15,000	Provision for doubtful debts	12,000	Manufacturing wages	60,000	Commission received	8,000	Fuel and power	1,25,500	Bills payable	15,000	Salaries	1,32,000	Creditors	70,000	Bad debts	10,000	Interest on loan to Rishabh	9,000	Bills receivable	12,000	Manufacturing wages		Debtors	91,000	outstanding	25,000	Carriage inwards	9,500			Rent	44,000			
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	Sample Paper – 2024-25 Accountancy Class – XI Solution & Marking Scheme	Value points	Mar ks
Q.No.	PART – A		
1	d. Institute of Chartered Accountants of India		1
2	b. IGST		1
3	d. A statement made to reconcile Cash book and Pass book Balances		1
4 A	c. Death of a manager		1
	Or		
4 B	c. Cash Flow Statement		1
5 A	a. ₹2,90,000		1
	Or		
5 B	d. It is a simple basis of accounting		1
6	b. A4, B3, C1, D2		1
7	b. Pay-In Slip		1
8	c. Opening entries		1
9	a. An increase in asset		1
10	b. Asset		1
11	b. ₹6,800		1
12 A	a. Both A and R are correct and R is the correct explanation of A		1
	Or		
12 B	c. A is true but R is False		1
13 A	b. ₹84,375		1
	Or		
13 B	b. Intangible Assets		1
14 A	a. Both A and R are correct and R is the correct explanation of A		1
	Or		
14 B	a. ₹12,000 debit side		1
15 A	c. Error of Principle		1
	Or		
15B	b. Error of Commission		1

16 A	<ol style="list-style-type: none"> Fixed assts = Furniture + Computers = 50,000 + 50,000 = 1,00,000 Lakshay is the creditor and the amount payable is ₹2,00,000 Expenses = electricity bill + telephone bill = 7,000 + 3,000 = 10,000 	1 ½+½ 1	3																																																														
Or																																																																	
16 B	<ol style="list-style-type: none"> Purchase = ₹4,00,000 + ₹2,00,000 = ₹6,00,000 Debtor is Utsav and the amount receivable is ₹1,50,000 Drawings = ₹2,000 + ₹5,000 = ₹7,000 	1 ½+½ 1	3																																																														
17 A	<p style="text-align: center;">SUSPENSE ACCOUNT</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left;">Dr.</th> <th colspan="3" style="text-align: right;">Cr.</th> </tr> <tr> <th style="width: 33%;">Particulars</th> <th style="width: 10%;">J.F.</th> <th style="width: 10%;">₹</th> <th style="width: 33%;">Particulars</th> <th style="width: 10%;">J.F.</th> <th style="width: 10%;">₹</th> </tr> </thead> <tbody> <tr> <td>To Rohan ½</td> <td></td> <td>10,000</td> <td>By Difference in Trial ½</td> <td></td> <td></td> </tr> <tr> <td>To Gobind ½</td> <td></td> <td>10,000</td> <td>Balance (Balancing Figure)</td> <td></td> <td>14,800</td> </tr> <tr> <td>To Sales A/c ½</td> <td></td> <td>1,800</td> <td>By Rakesh ½</td> <td></td> <td>4,000</td> </tr> <tr> <td></td> <td></td> <td></td> <td>By Naresh ½</td> <td></td> <td>3,000</td> </tr> <tr> <td></td> <td></td> <td>21,800</td> <td></td> <td></td> <td>21,800</td> </tr> </tbody> </table> <p>W. NOTES:</p> <p style="text-align: center;">JOURNAL</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Date</th> <th style="width: 50%;">Particulars</th> <th style="width: 10%;">L.F.</th> <th style="width: 10%;">Dr. (₹)</th> <th style="width: 10%;">Cr. (₹)</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td> Suspense A/c Dr. To Rohan To Gobind (Credit purchases from Rohan Rs.9,000 wrongly debited to Gobind as Rs. 10,000, now- rectified) </td> <td></td> <td style="text-align: right;">19,000</td> <td style="text-align: right;">9,000 10,000</td> </tr> <tr> <td>(b)</td> <td> Rakesh Dr. Naresh Dr. To Suspense A/c (Goods returned to Rakesh Rs.4,000 wrongly credited to Naresh as Rs.3,000, now rectified) </td> <td></td> <td style="text-align: right;">4,000 3,000</td> <td style="text-align: right;">7,000</td> </tr> <tr> <td>(c)</td> <td> Commission A/c Dr. Suspense A/c Dr. To Sales A/c (Cash sales Rs.2,000 wrongly credited to commission account as Rs.200, now rectified) </td> <td></td> <td style="text-align: right;">200 1,800</td> <td style="text-align: right;">2,000</td> </tr> </tbody> </table>	Dr.			Cr.			Particulars	J.F.	₹	Particulars	J.F.	₹	To Rohan ½		10,000	By Difference in Trial ½			To Gobind ½		10,000	Balance (Balancing Figure)		14,800	To Sales A/c ½		1,800	By Rakesh ½		4,000				By Naresh ½		3,000			21,800			21,800	Date	Particulars	L.F.	Dr. (₹)	Cr. (₹)	(a)	Suspense A/c Dr. To Rohan To Gobind (Credit purchases from Rohan Rs.9,000 wrongly debited to Gobind as Rs. 10,000, now- rectified)		19,000	9,000 10,000	(b)	Rakesh Dr. Naresh Dr. To Suspense A/c (Goods returned to Rakesh Rs.4,000 wrongly credited to Naresh as Rs.3,000, now rectified)		4,000 3,000	7,000	(c)	Commission A/c Dr. Suspense A/c Dr. To Sales A/c (Cash sales Rs.2,000 wrongly credited to commission account as Rs.200, now rectified)		200 1,800	2,000	½ each	3
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	(3)	Sohan To Mohan (Compensating error now rectified)	Dr.		100	100	1		
18	Accounting Equation of Nysha								
	S.No	Transactions	Assets = Liabilities + Capital						
			Cash	Stock	Debtor	Bank	= Shekhar	+ Capital	
	1.	Balances brought forward	20,000	10,000	15,000	30,000	15,000	60,000	
	2.	Payment made through cheque in full settlement of account ₹14,800 to the creditor				(14,800)	(15,000)	200	
		New Equation	20,000	10,000	15,000	15,200		60,200	
	3.	Sale of goods on credit to Manoj costing ₹5,000 at a profit of 60%		(5,000)	8,000			3,000	
		New Equation	20,000	5,000	23,000	15,200		63,200	
		Total	63,200				63,200		
19	Books of Nandini Trial Balance As at 31/3/2024								
	Account Head		Debit Balance		Credit Balance				
	Adjusted Purchases		1,50,000						
	Closing Stock* ½		40,000						
	Debtors* ½		60,000						
	Creditors				30,000				
	Fixed assets		50,000						
	Expenses* ½		20,000						
	Sales				2,00,000				
	Capital* ½				90,000				
	Total* ½		3,20,000		3,20,000				
	Note: Opening stock will not appear in the Trial Balance as the purchases are given as "Adjusted Purchases"*								
20	Types of reserves						½ each	3	
	1. Specific reserve								
	2. General reserve								
	3. Specific reserve								
	4. Capital reserve								
	5. Secret reserve								
	6. Capital reserve								
21	Accounting Principles/Concepts/Conventions followed or violated						2		
	1. Prudence is followed – Due explanation is required						2		
	2. Accounting Entity is violated – Due explanation is required							4	
	(1 for identification and 1 for explanation)								

		90,000			90,000
2023			2023		
July 1	To Machinery Disposal A/c	33,750	April 1	By Balance b/d	90,000
			July 1	By Depreciation A/c	3,750
2024			2024		
Mar. 31	To Balance c/d	1,12,500	Mar. 31	By Depreciation A/c	52,500
		1,46,250			1,46,250

Dr. Cr.

MACHINERY DISPOSAL ACCOUNT

Date	Particulars	Amount	Date	Particulars	Amount
2023		₹	2023		₹
July 1	To Machinery A/c	1,00,000	July 1	By Provision for Depreciation A/c	33,750
			July 1	By Bank A/c	15,000
			July 1	By Statement of Profit & Loss (Loss on sale)	51,250
		1,00,000			1,00,000

Working Notes :

(1) Calculation of loss on sale of machinery :	₹
Original Cost of 3rd machinery as on 1st April, 2021	1,00,000
Less : Depreciation @ 15% p.a. for 2 years 3 months on original cost method	33,750
Book Value as on 1st July, 2023	66,250
Less : Sale proceeds	15,000
Loss on sale	51,250
(2) Depreciation on unsold machinery for the year 2023-24 :	
On old machinery of Rs.2,00,000 for 1 year	30,000
On new machinery of Rs.2,00,000 for 9 months	22,500
	52,500

24

Books of Dev Traders

CASH BOOK (DOUBLE COLUMN)

Dr. Cr.

Date	Particulars	L.F.	Cash (₹)	Bank (₹)	Date	Particulars	L.F.	Cash (₹)	Bank (₹)
2024									
July 1	To Balance b/d		31,200		July 1	By Balance b/d			7,400
July 7	To Bank a/c	C	7,500		July 5	By Garvit		13,000	
July 8	To Bhavya		2,200		July 7	By Cash a/c	C		7,500
July 15	To Cash a/c	C		22,900	July 10	By Interest a/c			650
					July 15	By Bank a/c	C	22,900	
					July 15	By Balance c/d		5,000	7,350
			40,900	22,900				40,900	22,900
July 16	To Balance b/d		5,000	7,350					

½ x 8
= 4

6

		Journal Proper									
Date	Particulars	L.F	Debit ₹	Credit ₹							
2024 July 3	Purchase a/c Dr Input CGST a/c Dr Input SGST a/c Dr To Garvit (Goods purchased from Garvit)		12,000 720 720	13,440		1					
July 5	Garvit Dr To Discount received a/c (Discount received from Garvit)		440	440		1					
25 A	Books of Siya Journal						6				
Date	Particulars	L F.	Amount Dr.	Amount Cr.							
2024 April 3	Purchases A/c Dr. To Cash A/c To Discount Received A/c (Goods for Rs.8,000 purchased at 20% trade discount and 5% cash discount)		6,400	6,080 320		1					
April 8	Cash A/c Dr. To Sales A/c (Goods costing Rs. 15,000 sold at a profit of 33 $\frac{1}{3}$ % on cost)		20,000	20,000		1					
April 10	Loss by Fire A/c Dr. To Purchases A/c (Goods destroyed by fire)		4,000	4,000		1					
April 16	Plant A/c Dr. To Cash A/c (Plant purchased for Rs. 1,00,000 and installation charges paid Rs.2,000)		1,02,000	1,02,000		1					
April 20	Bank A/c Dr. Bad debts A/c Dr. To Mohan (The receipt of 40 paise per rupee)		3,000 4,500	7,500		1					
April 30	Salary A/c Dr. To Cash A/c To Outstanding Salary A/c (Salary paid and due)		50,000	40,000 10,000		1					
		Or									
25 B	Books of Keshav and Co. Sales return book						6				
Date	Particulars	Credit note no.	LF	Details	Sales return	Output CGST	Output SGST	Output IGST	Total		
2024 June 3	Sita Ram Kolkata Less: TD @15% Add: CGST @9% Add SGST @9%			80,000 <u>12,000</u> 68,000 6,120 <u>6,120</u> 80,240	68,000	6,120	6,120		80,240	1	
June 12	Hind Oil Co. Hyderabad			30,000							

	Add: IGST @18%			5,400 35,400	30,000			5,400	35,400	1		
June 26	Gujarat Gas Co. Ahmedabad Add: IGST @18%			20,000 3,600 23,600	20,000			3,600	23,600	1		
					1,18,000	6,120	6,120	9,000	1,39,240			
LEDGER POSTING												
SITA RAM												
Dr.				Cr.								
Date	Particulars	J.F.	Amount	Date	Particulars	J.F.	Amount					
			Rs.	2024			Rs.					
				June 3	By Sales Return A/c		68,000	1				
				June 3	By Output CGST Ale		6,120					
				June 3	By Output SGST A/c		6,120					
HIND OIL COMPANY												
Dr.				Cr.								
Date	Particulars	J.F.	Amount	Date	Particulars	J.F.	Amount					
			Rs.	2024			Rs.					
				June 12	By Sales Return A/c		30,000	1				
				June 12	By Output IGST A/c		5,400					
GUJARAT GAS COMPANY												
Dr.				Cr.								
Date	Particulars	J.F.	Amount	Date	Particulars	J.F.	Amount					
			Rs.	2024			Rs.					
				June 26	By Sales Return A/c		20,000	1				
				June 26	By Output IGST A/c		3,600					
PART – B												
26	a. 4,3,1,2									1	1	
27	d) ₹4,00,000									1	1	
28	a) Small proprietary and Partnership firms									1	1	
29	The correct option is:									1	1	
	S.No.	Particulars	L.F.	Debit ₹	Credit ₹							
	c	Profit & Loss a/c To Capital a/c	Dr	15,000	15,000							
30 A	Difference between Double Entry System and Single Entry System										1	1
	Basis	Double Entry System	Single Entry System									
	Trial Balance	Trial Balance is prepared and thus the arithmetical accuracy of the books can be verified	Trial Balance cannot be prepared and thus the arithmetical accuracy of the books cannot be verified	1								
Or												

30 B	<p style="text-align: center;">Difference between Double Entry System and Single-Entry System</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Basis</th> <th style="width: 40%;">Double Entry System</th> <th style="width: 40%;">Single Entry System</th> </tr> </thead> <tbody> <tr> <td>Authenticity</td> <td>This system is considered authentic by Court</td> <td>This system is not considered authentic by Court</td> </tr> </tbody> </table>	Basis	Double Entry System	Single Entry System	Authenticity	This system is considered authentic by Court	This system is not considered authentic by Court	1	1																										
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31	<p style="text-align: center;">Books of Tapan TRADING ACCOUNT for the period 1st April to 14th July, 2024</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Dr. Particulars</th> <th style="width: 10%;">₹</th> <th style="width: 40%;">Cr. Particulars</th> <th style="width: 10%;">₹</th> </tr> </thead> <tbody> <tr> <td>To Opening Stock</td> <td style="text-align: right;">60,000</td> <td>By Sales</td> <td style="text-align: right;">6,00,000</td> </tr> <tr> <td>To Purchases</td> <td style="text-align: right;">4,10,000</td> <td>By Closing Stock (1)</td> <td></td> </tr> <tr> <td>To Gross Profit @ 30% on sales (1)</td> <td style="text-align: right;">1,80,000</td> <td>(Balancing Figure)</td> <td style="text-align: right;">50,000</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">6,50,000</td> <td></td> <td style="text-align: right; border-top: 1px solid black;">6,50,000</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 20%;">₹</th> </tr> </thead> <tbody> <tr> <td>Stock on 14th July, 2024, as calculated above</td> <td style="text-align: right;">50,000</td> </tr> <tr> <td>Less : Stock remaining after burglary</td> <td style="text-align: right;">12,000</td> </tr> <tr> <td>Value of Stock stolen (1)</td> <td style="text-align: right; border-top: 1px solid black;">38,000</td> </tr> </tbody> </table>	Dr. Particulars	₹	Cr. Particulars	₹	To Opening Stock	60,000	By Sales	6,00,000	To Purchases	4,10,000	By Closing Stock (1)		To Gross Profit @ 30% on sales (1)	1,80,000	(Balancing Figure)	50,000		6,50,000		6,50,000		₹	Stock on 14th July, 2024, as calculated above	50,000	Less : Stock remaining after burglary	12,000	Value of Stock stolen (1)	38,000	2 3 1	3				
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32	<p>Gross profit = $\frac{25}{125} \times \text{Sales}$ Gross Profit = ₹5,00,000 × $\frac{25}{125}$ = ₹1,00,000</p> <p>Operating Profit = Gross Profit – Operating expenses (Advertisement + Discount allowed) + Operating incomes (Commission received) Operating Profit = ₹1,00,000 – (₹5,000 + ₹2,000) + ₹4,500 = ₹97,500</p> <p>Net Profit = Operating Profit – Non-Operating expenses (Loss by accident + Interest on long term dent) + Non-Operating Incomes (Gain on sale of Land) Net Profit = ₹97,500 – (₹3,000 + ₹2,000) + ₹10,000 = ₹1,02,500</p>	1 1½ 1½	4																																
33	<p style="text-align: center;">Books of Anika Statement of Affairs As at 1/4/23</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Liabilities</th> <th style="width: 10%;">Amount ₹</th> <th style="width: 30%;">Assets</th> <th style="width: 10%;">Amount ₹</th> </tr> </thead> <tbody> <tr> <td>Creditors</td> <td style="text-align: right;">2,50,000</td> <td>Cash in hand</td> <td style="text-align: right;">8,000</td> </tr> <tr> <td>Capital (Balancing fig.) (½)</td> <td style="text-align: right;">3,50,000</td> <td>Cash at bank</td> <td style="text-align: right;">15,000</td> </tr> <tr> <td></td> <td></td> <td>Debtors (½)</td> <td style="text-align: right;">1,35,000</td> </tr> <tr> <td></td> <td></td> <td>Stock in trade</td> <td style="text-align: right;">3,52,000</td> </tr> <tr> <td></td> <td></td> <td>Office equipment</td> <td style="text-align: right;">50,000</td> </tr> <tr> <td></td> <td></td> <td>Furniture</td> <td style="text-align: right;">40,000</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">6,00,000</td> <td></td> <td style="text-align: right; border-top: 1px solid black;">6,00,000</td> </tr> </tbody> </table>	Liabilities	Amount ₹	Assets	Amount ₹	Creditors	2,50,000	Cash in hand	8,000	Capital (Balancing fig.) (½)	3,50,000	Cash at bank	15,000			Debtors (½)	1,35,000			Stock in trade	3,52,000			Office equipment	50,000			Furniture	40,000		6,00,000		6,00,000	1 2	6
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	6,00,000		6,00,000																																

Statement of Affairs As at 31/3/24			
Liabilities	Amount ₹	Assets	Amount ₹
Creditors } (½)	2,10,000	Cash in hand } (½)	35,000
Capital (Balancing fig.) }	4,41,000	Cash at bank } (½)	25,000
		Debtors }	1,65,000
		Stock in trade }	3,45,000
		Office equipment 50,000	
		Less: Depreciation (5,000) (½)	45,000
		Furniture 40,000	
		Less: Depreciation (4,000) (½)	36,000
	<u>6,51,000</u>		<u>6,51,000</u>
Statement of Profit and Loss For the year ended 31/3/24			
Particulars	Amount ₹	Marks	
Capital as at 31/3/24	4,41,000	½	
Less: Additional capital (30,000 x 105%)	(31,500)	1	
Add: Drawings	72,000	½	
Less: Capital as at 1/4/23	(3,50,000)	½	
= Net Profit	1,31,500	½	
Books of Mehul Trading and Profit & Loss a/c For the year ended 31/3/2024			
Dr.		Cr.	
Particulars	₹	Particulars	₹
To Opening stock } (½)	45,000	By Sales } (½)	8,10,000
To Purchase } (½)	2,15,000	By Closing Stock } (½)	1,35,000
To Manufacturing wages (1)	60,000		
To Fuel and Power }	1,25,500		
To Carriage }	9,500		
To Gross Profit c/d (1)	4,90,000		
	<u>9,45,000</u>		<u>9,45,000</u>
To Insurance 12,000		By Gross Profit b/d	4,90,000
Less: Prepaid Ins. (2,000) (½)	10,000	By Commission rec. 8,000	
To Rent 44,000		Less: Advance rec. (2,000) (½)	6,000
Add: Outstanding rent 4,000 (½)	48,000	By Interest on Loan 9,000	
To Depreciation on machine }	20,000	Add: Accrued interest 11,000 (½)	20,000
To Depreciation on Furniture (½)	20,000	By Provision for bad debt	
To Salary }	1,32,000		
To Discount allowed }	6,000	Less: Bad debt (10,000) (½)	2,000
To Advertisement exp. }	35,000		
To Net Profit (½)	2,47,000		
	<u>5,18,000</u>		<u>5,18,000</u>
Working note:			
Rent for full year = 44,000 x $\frac{12}{11}$ = 48,000			
Outstanding Rent = 48,000 – 44,000 = 4,000			
Or			

Books of Ambika
Profit & Loss a/c
For the year ended 31/3/2024

Dr.

Cr.

Particulars	₹	Particulars	₹
To Depreciation on Mach.	(½)4,000	By Gross Profit b/d	4,22,000
To Depreciation on Furniture	(½)6,000	By Discount received } (½)	8,000
To Bad debt 24,000			
Add: Further BD 10,000			
Add: New Prov. 39,000			
Less: Old Prov. (12,000)	(½)61,000		
To Charity	10,000		
To Salaries 60,000			
Add: O/S Salary 12,000	(½)72,000		
To Rent	80,000		
To Printing and Stationery(½)	16,000		
To Insurance	12,000		
To Office Expenses	36,000		
To Net Profit (½)	1,33,000		
	<u>4,30,000</u>		<u>4,30,000</u>

(3½)

Balance Sheet
As at 31/3/2024

Liabilities	₹	Assets	₹
Prov. For Dep. Mach. 4,000		Machinery	40,000
Add: Dep. On Mach. 4,000	(½)8,000	Furniture 30,000	
Outstanding Salary	(½)12,000	Less: Depreciation (6,000)	(½)24,000
Capital 2,00,000		Debtors 4,00,000	
Less: Drawings (18,000)		Less: Bad debt (10,000)	
Add: Net Profit 1,33,000	(½)3,15,000	Less: Prov. For DD (39,000)	(½)3,51,000
Creditors 2,30,000		Stock 1,30,000	
	<u>5,65,000</u>	Cash at bank 20,000	
			<u>5,65,000</u>

(2½)

6

Working note:Salary for full year = $60,000 \times \frac{12}{10} = 72,000$ Outstanding Salary = $72,000 - 60,000 = 12,000$

=====

CLASS-XI
ECONOMICS (030)
Sample Paper (2024-25)

Time allowed: 3 hours

Maximum Marks : 80

General Instructions:

1. *This question paper contains two sections:*
Section A – Statistics (40)
Section B -- Micro Economics (40)
2. *Marks for questions are indicated against each question.*
3. *Question Nos.1-10 and 18-27 are MCQ carrying 1 mark each.*
4. *Question Nos. 11-12 and 28-29 are short answer questions carrying 3 marks each and are to be answered in 60 -80 words each.*
5. *Question Nos. 13-15 and 30-32 are also short answer questions carrying 4 marks each and are to be answered in 80-100 words each.*
6. *Question Nos. 16-17 and 33-34 are long answer questions carrying 6 marks each and are to be in 100-150 words.*
7. *Word limit is to be followed only for theory questions.*

Section -A (Statistics)

1. ----- is a true statement for expressing Loss of information. (1)
 - A. When the classification of data does not present the details which are available in organised data.
 - B. When the classification of data does not present the details which are available in raw data.
 - C. When the classification of data does not present the details which are available in secondary data.
 - D. When the classification of data does not present the details which are available in time series data.

2. Under exclusive method, (1)
 - A. The upper class limit of a class is excluded in the class interval.
 - B. The upper class limit of a class is included in the class interval.
 - C. The lower class limit of a class is excluded in the class interval.
 - D. The lower & the upper class limits of a class are included in the class interval.

3. Identify the statement which is not false : (1)

- A. Statistics deals with individuals.
- B. Statistics are true only on an average.
- C. Statistics deals with qualitative statements only.
- D. Statistics does not help in condensing mass data.

4. ----- is a positional average. (1)

- A. Arithmetic mean
- B. Arithmetic mean & mode
- C. Arithmetic mean & median
- D. Median

5. Read the following statements carefully: (1)

Statement 1 – Simple arithmetic mean is not affected by change of origin.

Statement 2– Simple arithmetic mean gives equal importance to all items of the series.

Choose the correct alternative:

- A. Statement 1 is true and statement 2 is false.
- B. Statement 1 is false and statement 2 is true.
- C. Both the statements 1& 2 are true.
- D. Both the statements 1&2 are false.

6. Identify the correct statement/s: (1)

- (i) If the difference of consecutive values is equal, r & r_k would give identical results.
- (ii) In case of presence of extreme values, r_k should be preferred over Pearson's coefficient.
- (iii) $r < r_k$ or $r = r_k$

Alternatives;

- A. (i)
- B. (ii)
- C. (i)& (ii)
- D. (i)& (iii)

7. Identify the incorrect set of statements : (1)

Column I	Column II
(i) Interpretation of data	(a) Drawing conclusions
(ii) Presentation of data	(b) Tables, graphs & diagrams
(iii) Statistics	(c) Not numerically expressed
(iv) Scarcity of resources	(d) A cause of economic problem

- A. (i),(a)
- B. (ii),(b)
- C. (iii),(c)
- D. (iv),(d)

8. Read the following statements: Assertion (A) and Reason (R). (1)

Assertion (A): Economic problem is essentially a problem arising from the necessity of choice.

Reason (R): Since given resources are limited & wants are unlimited, an individual has to make a choice as to which want to be satisfied .

Choose the correct option:

- A. Both Assertion (A) and Reason (R) are True and Reason (R) is the correct explanation of Assertion (A).
- B. Both Assertion (A) and Reason (R) are True and Reason (R) is not the correct explanation of Assertion (A)
- C. Assertion (A) is True but Reason (R) is False.
- D. Assertion (A) is False but Reason (R) is True.

9. Choose the correct sequence of the given functions of statistics related to the formulation of economic plans: (1)

- (i) Use of a measure of analysis
- (ii) Organisation & presentation of data
- (iv) Collection of data
- (iv) Interpretation of data & forecasting.

Alternatives:

- A. ii,iii,iv,i
- B. iii,i,ii,iv
- C. iii,ii,i,iv
- D. i,iii,ii,iv

10. Index no. for base year is (1)
- A. 0
 - B. 1
 - C. 10
 - D. 100

11. Illustrate the meaning of structured questions. List an advantage & disadvantage each of the same in comparison to unstructured questions. (1,2)

12. 80 students of section A of class XI obtained 40 mean marks in statistics, 40 students of section B obtained 50 mean marks in statistics. Find the mean marks in statistics for class XI as a whole. (3)

OR

In a class of 50 students, the mean marks in English were 58. Later on it was found that 2 students with marks 40 & 42 joined the class while it was realised that marks of a student were wrongly recorded as 25 instead of 20 & the same student left the section. Calculate the corrected mean.

13. Locate the median using a less than ogive : (4)

X	0-10	10-20	20-30	30-40	40-50	50-60
F	6	7	8	10	16	3

14. Calculate mode from the given data: (4)

Marks more than	0	20	40	60	80
No. of students	15	13	9	3	1

15. Elaborate the uses of index numbers in Economics. (4)

OR

- (i) If wholesale price index for week 1 = 800 & for week 2 = 880, calculate the weekly rate of inflation.
- (ii) Define price index no. & the simple aggregative method to calculate the price index no. (2,2)

16. (i) In the year 2023, 40 girl students from a college in Delhi went for an educational exchange trip to Singapore. The no. of boys was 50% of the total no. of girls. The total no. of teachers accompanying the students was 5 among whom 3 were female teachers.

In the next year the total no. of students increased by 20. The girl students were $\frac{1}{4}$ of the total students. The no of total teachers this year was 6 while the no. of female teachers did not change. Tabulate the given information.

(ii) Represent the following data through a Pie diagram (4,2)

Items	A	B	C	D
Expenditure(in %)	50	15	10	25

17. Calculate the coefficient of Correlation between X & Y variables by Spearman's rank method and interpret the results. (6)

X	90	88	78	78	74	70	65	62
Y	18	25	30	30	30	42	38	47

OR

Elucidate the properties of correlation coefficient.

Section B (Micro Economics)

18. The factor causing extension in supply of a good is (1)

- (A) increase in number of firms
- (B) decrease in tax rate
- (C) improvement in technology
- (D) increase in price of the good.

19. Coefficient of Inelastic supply is (1)

- (A) infinity
- (B) greater than one
- (C) zero
- (D) less than one.

Q20. Match the statements in Coloumn A and B

(1)

COLUMN A	COLUMN B
(i) Buffer Stock	a) price fixed below equilibrium
(ii) Price floor	b) Direct intervention by government
(iii) Rationing	c) Price fixed above equilibrium
(iv) Price ceiling and support price	d) a consequence of price support program

Choose the correct alternative.

- (A) (i)d (ii)c (iii)a (iv)b
- (B) (i)a(ii)c (iii)d (iv)b
- (C) (i)b (ii)c (iii)a (iv)d
- (D) (i)d (ii)a (iii)c (iv)b.

Q21. In the following questions, Statement 1 is followed by Statement 2. (1)

Statement 1. Positive statements do not pass any value judgement.

Statement 2. Normative statements are verifiable

Mark the correct choice as:

- (A) Both the statements are true.
- (B) Both the statements are false.
- (C) Statement 1 is true and statement 2 is false.
- (D) Statement 2 is true and statement 1 is false.

Q22. Read the following statements: Assertion (A) and Reason (R). Choose one of the correct alternatives given below. (1)

Assertion (A): A rational producer always seeks to operate in Phase II of Law of Variable Proportions.

Reason (R): In Phase II of Law of Variable Proportions, Marginal Product is negative.

Alternatives:

- (A) Both Assertion (A) and Reason (R) are True and Reason (R) is the correct explanation of Assertion (A).

(B) Both Assertion (A) and Reason (R) are True and Reason (R) is not the correct explanation of Assertion (A).

(C) Assertion (A) is True but Reason (R) is False.

(D) Assertion (A) is False but Reason (R) is True.

Q23. Price of a good 'X' rises from 20 per unit to 40 per unit. The consumer buys the same quantity, he bought at 20 per unit. What would be price elasticity of demand? (1)

(A) infinity

(B) zero

(C) one

(D) less than one.

Q24. All the curves except_____ are U shaped curves: (1)

(A) Average Fixed Cost Curve

(B) Average Cost Curve

(C) Average Variable Cost Curve

(D) Marginal Cost Curve.

Q25. Budget set includes: (1)

(A) All those combinations of two goods which a consumer already possesses

(B) All those combinations of two goods which a consumer cannot afford

(C) All those combinations of two goods which a consumer is willing to buy

(D) All those combinations of two goods which a consumer can afford.

Q26. Which Law states that: "When a consumer consumes more and more units of a product, the utility derived from each additional unit decreases"? (1)

(A) Law of Equi-Marginal Utility.

(B) Law of Cardinal Utility.

(C) Law of Ordinal Utility.

(D) Law of Diminishing Marginal Utility.

Q27. Based on the given schedule, state the effect on the demand curve: (3)

PRICE(Rs)	QUANTITY (Kg)
4	50
4	30

- A) Leftward shift of demand curve.
- B) Rightward shift of the demand curve.
- C) Upper movement along the demand curve.
- D) Downward movement along the demand curve.

Q28. The government establishes a large number of institutes of Science and technology. How will it affect the PPC? Explain. (3)

OR

Production in an economy is below its potential due to unemployment, government starts employment generation schemes. Explain .

Q29. "In a perfectly competitive market buyers treat products by all the firms homogeneous". Explain the significance of homogeneity of goods in a perfectly competitive market. (4)

Q30. With the help of diagram, explain the effect of the increase in the level of air pollution on the market demand curve for Air Purifiers in Delhi. (4)

OR

Giving reason, state the impact of each of following on demand curve of a normal good 'X' if:

- (i) Increase in price of good X
- (ii) Income of consumer increases.

Q31. Delhites witnessed sharp rise in temperature in summer this year. This has rapidly increased the demand for cotton shirts in the market. On the other hand ,India witnessed bumper cotton produce due to favourable climate conditions . (4)

On the basis of above information answer the following questions.

(I) Explain the likely effect on the supply of cotton shirts in the market.

(II) If the increase in the demand for cotton shirts is in the same proportion as increase in the supply of cotton .How will it affect equilibrium Price and Quantity of Cotton shirts. Explain with the help of a diagram.

Q32.

PRICE(Rs)	OUTPUT (Units)	TOTAL REVENUE (Rs)	MARGINAL REVENUE (Rs)
7	-	7	-
-	2	10	-
-	3	-	-1
1	-	-	-5

(4)

Q33. A consumer consumes only two goods X and Y whose prices are Rs 2 and Rs 1 per unit respectively. If the consumer chooses a combination of the two goods with marginal utility of X being 4 and that of Y also being 4, Is the consumer in equilibrium? Give reasons. Explain what will a rational consumer do in this situation? Use Marginal Utility Analysis.

(6)

Q34. The equality of marginal cost and marginal revenue is a condition necessary for equilibrium, but it is not by itself sufficient to assure the attainment of producer's equilibrium. Comment.

(6)

OR

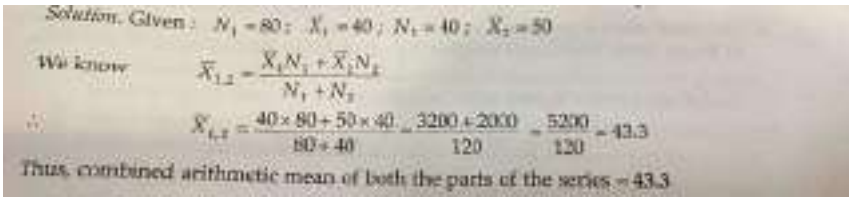
Availability of agricultural land is limited in India but demand of food grains is continuously increasing. Is it possible to increase the supply of food grains by continuously increasing one variable input like seeds?

Which law becomes applicable here? Explain it with the help of diagram.

ECONOMICS 2024-25

MARKING SCHEME/ HINTS TO SOLUTIONS

NOTE: ANY OTHER RELEVANT ANSWER NOT GIVEN HEREIN BUT GIVEN BY CANDIDATE BE SUITABLY AWARDED.

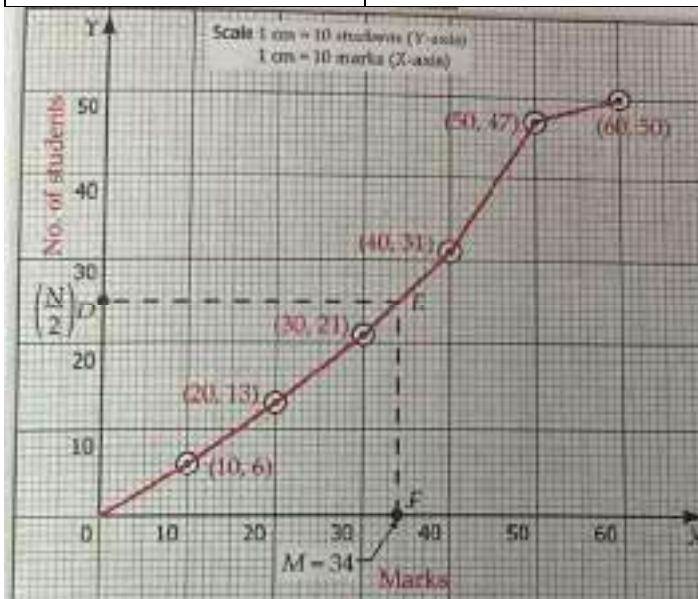
Q.NO	Value Points	Marks	Total Marks
1.	(B) When the classification of data does not present the details which are available in raw data.	1	1
2.	(A) The upper class limit is excluded in the class interval.	1	1
3.	(B) Statistics are true only on an average.	1	1
4.	(D) Median	1	1
5.	(B) Statement 1 is false and statement 2 is true.	1	1
6.	(C) i&ii	1	1
7.	(C) iii,c	1	1
8.	(C) Assertion (A) is true but Reason (R) is false.	1	1
9.	(C) iii,ii,i,iv	1	1
10.	(D) 100	1	1
11.	Structured questions are closed ended questions i.e an alternative is to be chosen from the given options. Advantage –The responses are easy to compare & it is possible to draw conclusions. Disadvantage-These do not have a scope for individual responses.	1 1 1	3
12	 <p style="text-align: center;">OR</p>	1 2	3

$$\begin{aligned} \text{Corrected Mean} &= \frac{\sum X - IC + C}{N} \\ &= \frac{(58 \times 50) + 40 + 42 - 25}{52 - 1} \\ &= \frac{2900 + 57}{51} \\ &= 57.98 \end{aligned}$$

1
1
1

13.

MARKS	NO. OF STUDENTS
LESS THAN 10	6
LESS THAN 20	13
LESS THAN 30	21
LESS THAN 40	31
LESS THAN 50	47
LESS THAN 60	50



2

2

4

14.

Marks(C.I)	frequency
0-20	2
20-40	4
40-60	6
60-80	2
80-100	1

1

15.	Grouping Table							1.5	4	
	Marks (C.I)	frequency	II	III	IV	V	VI			
	0-20	2								
	20-40	4	6							
	40-60	6		10	12					
	60-80	2	8			12				
	80-100	1		3			12			
	Analysis Table									
	Marks(C.I)	I	II	III	IV	V	VI			
	0-20				1					
	20-40			1	1	1				
	40-60	1	1	1	1	1	1			
	60-80		1			1	1			
	80-100						1			
	Modal class- (40-60)									
$\text{Mode} = l + \left\{ \frac{(f_1 - f_0)}{2f_1 - f_0 - f_2} \right\} \times i$ $= 40 + \left\{ \frac{(6 - 4)}{12 - 4 - 2} \right\} \times 20$ $= 40 + (2 \times 20) / 6$ $= 40 + 6.66$ $= 46.66$							1.5			
<p>The various index numbers are used for policy making:</p> <ol style="list-style-type: none"> Consumer index number is helpful in wage negotiations , formulation of policies related to income, price, rent, taxation and others. Whole sale price index is used to eliminate the effect of changes in prices on aggregates such as national income, capital formulation etc. WPI is also used to measure inflation. CPI is also used for measuring purchasing power of money and real wage. <p>(Any other)</p>							1	1	1	1
							4			

OR

(i)

Solution. Rate of inflation = $\frac{X_t - X_{t-1}}{X_{t-1}} \times 100$

Here $t = 880$ and $t - 1 = 800$

Weekly rate of inflation

$$= \frac{880 - 800}{800} \times 100 = \frac{80}{800} \times 100 = 10\%$$

1

2

1

ii) Price index number is a statistical device that measures and permits the comparison of the prices of given commodities. Simple aggregate method is unweighted method to calculate the price index no. . it is also known as actual price method. In this method, aggregate prices of commodities in the current year are divided by aggregate prices of these commodities in the base year.

1

1

2

16 (i)

Table no- 1

Classification of students & teachers going for educational exchange trip basis gender

(fig. in nos.)

	2023			2024		
Person/gender	Male	female	Total	Male	Female	Total
Students	20	40	60	60	20	80
Teachers	2	3	5	3	3	6
Total	22	43	65	63	23	86

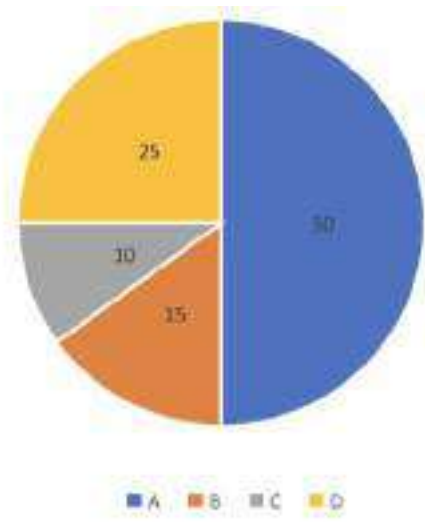
1(for mat)
1(ot her parts)

2(cel ls)

4

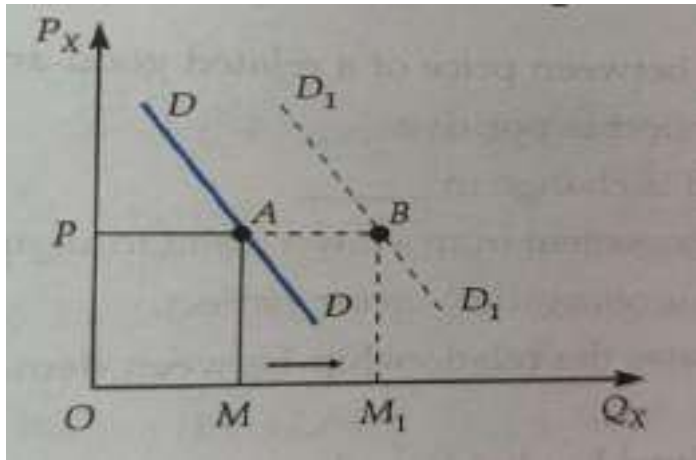
Footnote: Students & teachers of St. Stephen's College

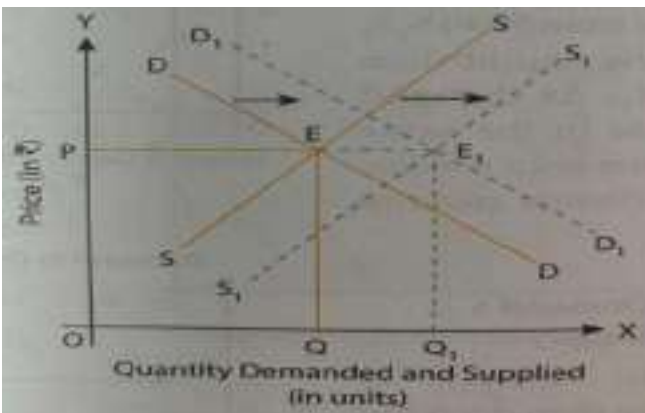
Source: College records

(ii)	Items	Expenditure (%)		Expenditure (degrees)		1		
	A	50		180				
	B	15		54				
	C	10		36				
	D	25		90				
<p>EXPENDITURE ON ITEMS</p>  <p>A pie chart titled 'EXPENDITURE ON ITEMS' showing the distribution of expenditure across four items: A, B, C, and D. Item A (blue) represents 50% of the total expenditure, which is 180 degrees. Item B (orange) represents 15%, or 54 degrees. Item C (grey) represents 10%, or 36 degrees. Item D (yellow) represents 25%, or 90 degrees. A legend below the chart identifies the colors for each item: A (blue), B (orange), C (grey), and D (yellow).</p>								
						1(key y ,diag ram)	2	
17.	X	R1	Y	R2	D	D ²	2	
	90	1	18	8	-7	49		
	88	2	25	7	-5	25		
	78	3.5	30	5	-1.5	2.25		
	78	3.5	30	5	-1.5	2.25		
	74	5	30	5	0	0		
	70	6	42	2	4	16		
	65	7	38	3	4	16		
62	8	47	1	7	49			
						159.5		

$r_k = 1 - \frac{6\{\sum D^2 + 1/12(m^3 - m) + 1/12(m^3 - m)\}}{n^3 - n}$ $= 1 - \frac{6[159.5 + 1/12(2 \times 2 \times 2 - 2) + 1/12(3^3 - 3)]}{8^3 - 8}$ $= 1 - \frac{6[162]}{504} = 1 - 1.93 = -0.93$	1	
There is fairly high degree of negative correlation between the X & Y variables.	1	6
OR		
PROPERTIES OF CORRELATION COEFFICIENT		
1. r has no unit. It is a pure no.	1	
2. A negative value of r indicates an inverse relation among two variables. E.g price and demand.	1	
3. If r is positive the two variables move in the same direction. E.g price and supply.	1	
4. The value of r lies between -1 and +1.	1	
5. The magnitude of r is unaffected by the change of origin and change of scale.	1	
6. If r=0 the two variables are not linearly correlated. (or any other)	1	6
	1	

18	D) Increase in price of the good		1
19	D) less than one		1
20	A) i) d ii) c iii) a iv) b		1
21	C) Statement 1 is true and statement 2 is false		1
22	C) Assertion(A) is true but Reason (R) are is false		1
23	A) Zero		1
24	A) Average fixed cost		1
25	D) All those combinations of two goods which are consumer can afford.		1

26	C) Law of diminishing marginal utility		1
27	A) Leftward shift in demand curve		1
28	By these institutes skill development will improve. This would result in increase in the production potential of the country. So the PPC will shift to the right. OR Production below the potential means that total production in the economy is somewhere below the production possibility curve . When government starts employment generation schemes, as the economy is operating inside the PPC, the economy moves forward towards the PPC.	1 1 1 1 2	3 3
29	Implication of Homogeneous Product' is that buyers treat the products as identical. Therefore, the buyers are willing to pay only the same price for the products of all the firms in the industry. It also implies that no individual firm is in a position to charge a higher price for its product. This ensures uniform price in the market.		3
30	With the increase in level of air pollution, the demand for air purifier will increase . There will be rightward shift in Market demand curve. DIAGRAM  OR (i) Quantity demanded of good X would decrease, with increase in price of good X due to operation of law of demand, which is depicted by upward movement along the demand curve. (ii) As income of consumer increases, he would demand more of the good as his disposable income increases and he is in a position to buy more of good X. Thus demand curve shifts to the right.	1 1 2 2	4 4

31	<p>(I)The supply of cotton shirt will increase as price of input ie cotton , falls sharply due to bumper produce.</p> <p>(II)When increase in demand is proportionately equal to increase in supply, then rightward shift in demand curve from DD to D₁D₁ is proportionately equal to rightward shift in supply curve from SS to S₁S₁. The new equilibrium is determined at E₁. As both demand and supply increase in the same proportion, equilibrium price remains the same at OP, but equilibrium quantity rises from OQ to OQ₁</p> 	1 2 1	4																				
32	<table border="1" data-bbox="337 976 1052 1270"> <thead> <tr> <th>PRICE</th> <th>OUTPUT</th> <th>TR</th> <th>MR</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>1</td> <td>7</td> <td>7</td> </tr> <tr> <td>5</td> <td>2</td> <td>10</td> <td>3</td> </tr> <tr> <td>3</td> <td>3</td> <td>9</td> <td>-1</td> </tr> <tr> <td>1</td> <td>4</td> <td>4</td> <td>-5</td> </tr> </tbody> </table>	PRICE	OUTPUT	TR	MR	7	1	7	7	5	2	10	3	3	3	9	-1	1	4	4	-5	1/2x8	4
PRICE	OUTPUT	TR	MR																				
7	1	7	7																				
5	2	10	3																				
3	3	9	-1																				
1	4	4	-5																				
33	<p>Given $P_x=2$,$P_y=1$ and $MU_x=4$,$MU_y=4$</p> <p>A consumer will be in equilibrium when $MU_x/P_x=MU_y/P_y$.</p> <p>$4/2 < 4/1$, $2 < 4$</p> <p>This would induce the consumer to buy more of Y in place of X till $MU_x/P_x=MU_y/P_y$. With Explanation</p>	3 3	6																				

34	<p>The producer's equilibrium conditions are: (i) $MC = MR$ (ii) $MC > MR$ after equilibrium.</p> <p>Suppose $MC > MR$ In this situation, it will be profitable for the firm to produce more or less depending upon relative changes in MC and MR till $MC = MR$</p> <p>Suppose $MC < MR$ It will be profitable for the producer to produce more till $MC = MR$. $MC = MR$ not a sufficient condition to ensure equilibrium.</p> <p>Given $MC = MR$ suppose the behaviour of MC and MR is such that if one more unit is produced, MC becomes less than MR. Then in this case it will be profitable for the firm to produce more. Therefore, in this case though $MC = MR$ the producer is not in equilibrium.</p> <p>However, if after $MC = MR$ output, MC becomes greater than MR, it will be most advantageous for the firm to produce only upto $MC=MR$.</p> <p style="text-align: center;">OR</p> <p>It will not be possible to increase the supply of food grains continuously only by increasing seeds because of the law of variable proportions As we increase the use of seeds without changing other inputs, the production will increase but beyond the level, it will start falling</p> <p>Phase 1: Initially variable input is too small as compared to the fixed input. As production starts, there is efficient use of the fixed input, leading to rise in productivity of the variable input on account of division of labour. As a result, TP rises at increasing rate.</p> <p>Phase II: After a level of output, pressure on fixed input leads to fall in productivity of the variable input. As a result, TP continues to rise but at a decreasing rate.</p> <p>Phase III: The amount of variable input becomes too large in comparison to the fixed input causing decline in TP.</p>	<p>2</p> <p>2</p> <p>2</p> <p>1.5</p> <p>1.5</p> <p>1.5</p> <p>1.5</p>	<p>6</p> <p>6</p>
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SAMPLE PAPER
CLASS XI
Session (2024-25)
MATHEMATICS(041)

Time Allowed: 3 Hours

Maximum Marks: 80

General Instructions :

Read the following instructions very carefully and strictly follow them :

- (i) This question paper contains **38** questions. **All** questions are **compulsory**.
- (ii) The question paper is divided into **five** sections - **A, B, C, D and E**.
- (iii) **In Section A**, Questions no. **1 to 18** are Multiple Choice questions (MCQs) and questions number **19 and 20** are Assertion-Reason based questions of 1 mark each.
- (iv) **In Section B**, Questions no. **21 to 25** are very Short answer (VSA)-type questions, carrying 2 marks each.
- (v) **In Section C**, Questions no. **26 to 31** are Short answer (SA)-type questions, carrying 3 marks each.
- (vi) **In Section D**, Questions no. **32 to 35** are Long answer (LA)-type questions of 5 marks each.
- (vii) **Section E** Questions no. **36 to 38** are case based questions carrying 4 marks each.
- (viii) There is no overall choice. However, an internal choice has been provided in 2 questions in Section B, 3 questions in Section C, 2 questions in Section D and 2 questions in Section E.
- (ix) Use of calculators is not allowed.

SECTION A		
This section consists of 20 multiple choice questions of 1 mark each. 20 x 1 = 20		
Q1	If $U = \{1, 2, 3, \dots, 40\}$; $P = \{x : x \text{ is divisible by 2 and 3}\}$ and $Q = \{x : x = n^2, n \in \mathbb{N}\}$ then $n(P) - n(Q)$ is (A) 0 (B) 1 (C) 2 (D) 3	Marks 1
Q2	The greatest value of $(\sin x \cos x)$ is (A) 1 (B) 2 (C) $\sqrt{2}$ (D) $\frac{1}{2}$	1
Q3	Number of 5-digit even numbers that can be formed using the digits 1, 3, 4, 7, 8, if repetition of digit is not allowed, is (A) 500 (B) 60 (C) 48 (D) 24	1
Q4	$i^{25} + i^{36} + i^{42} + i^{55}$ is equal to (A) 0 (B) 2 (C) $2i$ (D) $2 + 2i$	1

Q5	The center and radius of circle $3x^2 + 3y^2 = 7$ is (A) $(0,0) ; \sqrt{7}$ (B) $(0,0) ; \sqrt{3}$ (C) $(0,0) ; \sqrt{\frac{7}{3}}$ (D) $(0,0) ; \frac{7}{3}$	1
Q6	$\lim_{x \rightarrow 0} \frac{x(e^x - 1)}{1 - \cos x}$ (A) 2 (B) 0 (C) 1 (D) $\frac{1}{2}$	1
Q7	The minimum value of $7^{2(1-x)} + 49^x$ is (A) 14 (B) $\frac{2}{7}$ (C) 7 (D) 49	1
Q8	If $\lim_{x \rightarrow -a} \frac{x^7 + a^7}{x+a} = 7$, then the value of a is (A) 1 (B) -1 (C) ± 1 (D) 0	1
Q9	If the variance of the data 2,4,5,6,8,17 is 23.33, then variance 4,8,10,12,16,34 will be (A) 23.23 (B) 25.33 (C) 46.66 (D) 93.32	1
Q10	If the extremities of the diagonal of the base of the cube are $(1,-2,3)$ and $(2,-3,5)$ then the length of the side of cube is (A) $\sqrt{6}$ units (B) $\sqrt{3}$ units (C) $\sqrt{5}$ units (D) $\sqrt{7}$ units	1
Q11	A clock shows 7:20. The angle between the hour hand and minute hand would be : (A) 50° (B) 80° (C) 100° (D) 120°	1
Q12	Given x is a real number satisfying $1 - x > 2x - 5$, x belongs to : (A) $(-\infty, -2)$ (B) $(-\infty, 2)$ (C) $(-2, \infty)$ (D) $(2, \infty)$	1
Q13	If the mean of the data : 2,0,7,-5,8,11,4,-3 is 3, then the mean deviation about mean of the data is (A) 2.5 (B) 5.5 (C) 4.5 (D) 1	1
Q14	If $R = \{(x, y) : x, y \in W, 2x + y = 8\}$ then domain of R is (A) $\{0,1,2,3,4,5\}$ (B) $\{0,1,2,3,4,5,6\}$ (C) $\{0,1,2,3,4\}$ (D) $\{0,1,2,3\}$	1

Q15	If $5 \times 5^{\frac{1}{3}} \times 5^{\frac{1}{9}} \times 5^{\frac{1}{27}} \times \dots = 5^m$, then m is equal to (A) $\frac{3}{2}$ (B) $\frac{2}{3}$ (C) 1 (D) $\frac{3}{4}$	1
Q16	If two complex numbers z_1, z_2 are represented by points (2, -1) and (-3, 4) in the Argand Plane, then $\overline{(z_1 - z_2)}$ is (A) $-1 - 5i$ (B) $5(1 - i)$ (C) $-1 + 5i$ (D) $5(1 + i)$	1
Q17	$\sum_{k=0}^n C(n, k) 3^k$ is equal to (A) 4^{2n} (B) 3^n (C) 4^n (D) 3^{2n}	1
Q18	If E and F are two events associated with a random experiment, having sample space S and $P(E \cup F) = P(E) + P(F)$, then which of the following statements is always true (A) $E \cup F = S$ (B) $P(E) = P(F)$ (C) $P(E \cup F) = 1$ (D) $E \cap F = \phi$	1
<p align="center">ASSERTION-REASON BASED QUESTIONS</p> <p>Q 19 and 20 are Assertion - Reason Based Questions</p> <p>In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.</p> <p>(A) Both A and R are true and R is the correct explanation of A. (B) Both A and R are true but R is not the correct explanation of A. (C) A is true but R is false. (D) A is false but R is true.</p>		
Q19	ASSERTION (A): Suppose f is a real valued function, the derivative of ' f ' at x is given by $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h)-f(x)}{h}$ REASON (R): If $y = f(x)$ is the function, then derivative of ' f ' at any x is denoted by $f'(x)$	1
Q20	ASSERTION (A): $C(10, 6) : P(10, 4) = 1 : 12$ REASON (R): $C(n, r) = C(n, n - r), 0 \leq r \leq n$	1

SECTION B

In this section there are **5** very short answer type questions of **2** marks each.

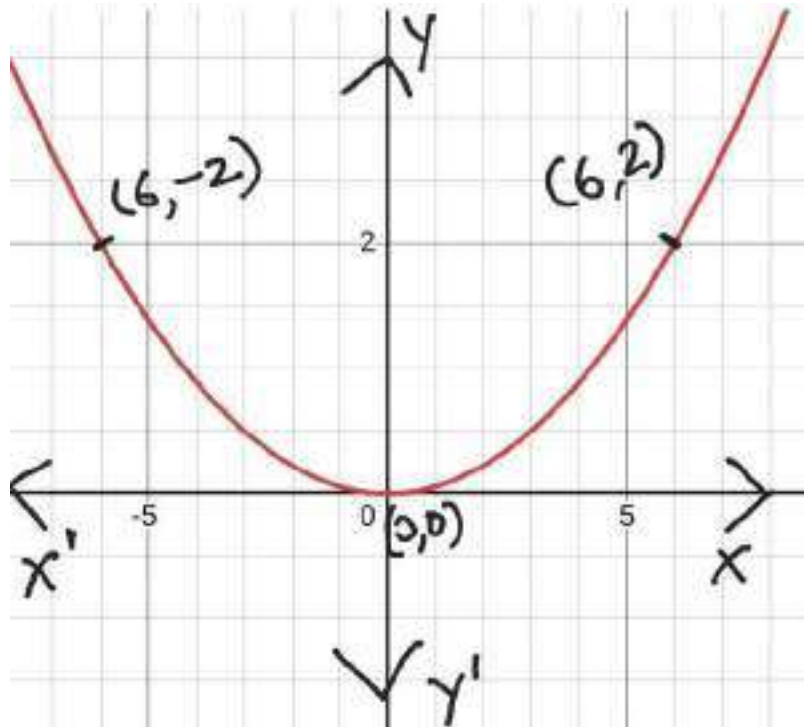
Q21	<p>If $2p + iq = \frac{a+ib}{a-ib}$, then show that $4p^2 + q^2 = 1$</p>	2
Q22	<p>If $U = \{x : x \in \mathbb{N} \text{ and } 1 \leq x \leq 20\}$ $A = \{x : x \in \mathbb{N} \text{ and } 1 \leq x \leq 15\}$ $B = \{x : x \in \mathbb{N} \text{ and } x = 2n - 1, n \leq 5\}$</p> <p>Represent the above sets by a Venn diagram showing set U as a universal set. Write the relation between Set A and Set B.</p>	2
Q23	<p>Evaluate the left hand limit and right-hand limit of the following function</p> $f(x) = \begin{cases} x & \text{if } x \neq 0 \\ x & \text{if } x = 0 \end{cases}$ <p>Does $\lim_{x \rightarrow 0} f(x)$ exist?</p> <p style="text-align: center;">OR</p> <p>If $f : \mathbb{R} \rightarrow \mathbb{R}$ be a function defined</p> $f(x) = \begin{cases} 3x^2 + 9 & \text{if } x \leq \frac{3}{2} \\ 4 + 9x & \text{if } x > \frac{3}{2} \end{cases}$ <p style="text-align: right;">then find the value of $f'(2) - f'(1)$</p>	2
Q24	<p>The figure shows a relation from a set X to a set Y.</p> <div style="text-align: center;"> </div> <p>Write the above relation in Roster form. Is the above relation a function? Give reason in support of your answer.</p> <p style="text-align: center;">OR</p> <p>Let $f(x) = 2x^2 + 3x - 5$ and $g(x) = x - 1$. Find $(\frac{f}{g})(x)$. Also find the Domain and Range of Quotient function.</p>	2

Q25	If P is the foot of perpendicular from the point S(6,7,8) on the XY-plane and Q is the mirror image of the point S (6,7,8) in the XY-plane ,find PQ.	2																												
SECTION C In this section there are 6 short answer type questions of 3 marks each.																														
Q26	Find the number of arrangements of the letters of the word SELFIE. In how many of these arrangements there are exactly 2 letters between 2 E's. OR In how many of the distinct permutations of the letters in TELANGANA do the three A's not come together?	3																												
Q27	Draw the graph of $f(x) = x^3$. Hence find its range.	3																												
Q28	Complete the following table for the function $y = 4 \sin x$ <table border="1" data-bbox="250 936 1291 1136" style="width: 100%; text-align: center;"> <tr> <td>x</td> <td>0</td> <td>$\frac{\pi}{6}$</td> <td>$\frac{\pi}{3}$</td> <td>$\frac{\pi}{2}$</td> <td>$\frac{2\pi}{3}$</td> <td>$\frac{5\pi}{6}$</td> <td>π</td> <td>$\frac{7\pi}{6}$</td> <td>$\frac{4\pi}{3}$</td> <td>$\frac{3\pi}{2}$</td> <td>$\frac{5\pi}{3}$</td> <td>$\frac{11\pi}{6}$</td> <td>2π</td> </tr> <tr> <td>y</td> <td>0</td> <td>-</td> <td>3.46</td> <td>-</td> <td>3.46</td> <td>-</td> <td>0</td> <td>-</td> <td>-3.46</td> <td>-</td> <td>-3.46</td> <td>-</td> <td>0</td> </tr> </table> <p>Specify the range of the given function in set builder form.</p>	x	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	π	$\frac{7\pi}{6}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{11\pi}{6}$	2π	y	0	-	3.46	-	3.46	-	0	-	-3.46	-	-3.46	-	0	3
x	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	π	$\frac{7\pi}{6}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{11\pi}{6}$	2π																	
y	0	-	3.46	-	3.46	-	0	-	-3.46	-	-3.46	-	0																	
Q29	The water acidity in a pool is considered normal when the average pH reading of three daily measurements is between 8.2 and 8.5. If the first two pH readings are 8.1 and 8.6, find the range of pH value for the third reading that will result in the acidity level being normal. OR Solve the system of inequalities: $4x + 7 > x - 5$ $12 - 7x \geq - 2$ and represent the solutions on the number line	3																												
Q30	Find the derivative of $f(x) = \frac{2x+3}{x-2}$ by first principle.	3																												

Q31

A satellite dish is in the shape of a parabolic surface. Signals from a satellite strike the surface of the dish and are reflected to a single point (the focus) where the receiver is located. The satellite dish shown in the figure has a diameter of 12 meters and a depth of 2 meters. The parabola is positioned in a rectangular coordinate system with its vertex at the origin. How far from the vertex of the dish should the receiver be placed? Also write the equation of the parabolic surface.

3



OR

An arch is in the form of a semi-ellipse. It is 8m wide and 2m high at the centre. Find the height of the arch at a point 1.5 m from one end.

SECTION D

In this section there are 4 long answer type questions of 5 marks each.

Q32 If the image of the point (4, 3) with respect to the line l is (2,1) , then find the equation of the line l . Also, find the value of k if the distance between the above line and the line $3x+3y+k=0$ is $\frac{14}{\sqrt{3}}$ units.

OR

A line is such that its segment between the lines $x - 2y - 2 = 0$ and $2x + y - 1 = 0$ is bisected at the point (1, 3). Obtain its equation.

Q33 Following table represents the number of persons of different age groups in a locality doing Yoga in the morning:

Age of persons (in years)	10-20	20-30	30-40	40-50	50-60
Number of persons	5	8	8	15	14

Find the mean and the variance of the above data.

OR

The mean and standard deviation of 100 observations were calculated as 40 and 5.1, respectively by a student who took by mistake 50 instead of 40 for one observation. What are the correct mean and standard deviation?

Q34 Find the coefficient of x^5 in the product $(x + 3)^5(2 - x)^6$.

Q35 Given, $A = \{ x : - 1 < x \leq 5, x \in \mathbb{R} \}$ and $B = \{ x : - 4 < x \leq 3, x \in \mathbb{R} \}$

Find:

(i) $A \cap B$
(ii) $A' \cap B$
(iii) $A - B$

Also represent each result on different number lines.

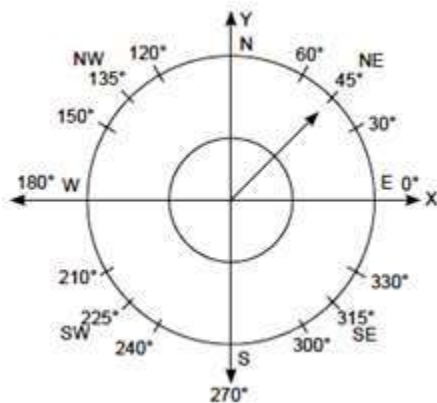
SECTION E

This section comprises 3 case-study/passages-based questions of 4 marks each.

Q36

Magnetic Compass

The figure given below shows the compass. The East direction is along the positive x-axis (0° angle) and North direction is along the +ve y-axis (90° angles). Initially the pointer is pointed towards the NorthEast direction. Pointer is deflected in a magnetic field by some angle.



On the basis of above scenario answer the following questions

- (i) If the pointer moves in an anticlockwise direction by an angle of 90° , then find the value of the sine of the angle made by the pointer from the East direction. 1
- (ii) If the sine and cosine of angle made by a pointer with East direction is $(-\frac{1}{\sqrt{2}})$ then write the direction the pointer shows. 1
- (iii) If the tip of the pointer moves in an anticlockwise direction by an angle of 30° it travels a distance of 11 cm then find the length of the pointer.
- OR
- (iii) Find the degree measure of the angle through which the pointer moves if its length is 10 cm and the tip of the pointer describes an arc of length 22cm. 2

Q37

Chain Reaction

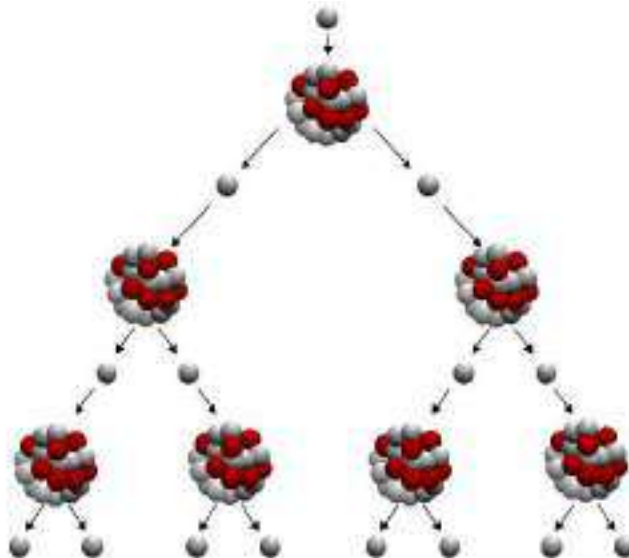
In a nuclear fission chain reaction, a free neutron interacts with the nucleus of an atom and causes that nucleus to split apart into two new, less massive nuclei. The nuclei in turn repeat the process and split into four new nuclei and the process goes on. The picture given below shows the process till 4th generation.

1st Generation

2nd Generation

3rd Generation

4th Generation



On the basis of the above case, answer the following questions.

- (i) Write the number of nuclei formed starting from 1st generation to fourth generation. Identify the sequence so formed.
- (ii) Write the number of nuclei formed in the 10th generation.
- (iii) Find the total number of nuclei formed till 7th generation?

OR

- (iii) If the m th generation has 96 more nuclei than the n th generation, then find the value of m and n .

1

1

2

Q38

Cricket Team Selection

Cricket is a game of uncertainties. Love for the game of cricket is increasing day by day. A state cricket authority needs to select a team of 11 members. They have asked two coaches from a government academy to select the team members based on their experience and performance in the last 15 matches. There are 20 players containing 8 bowlers, 7 batsmen and 5 all-rounders from which to choose.



Answer the following on the basis of above case study.

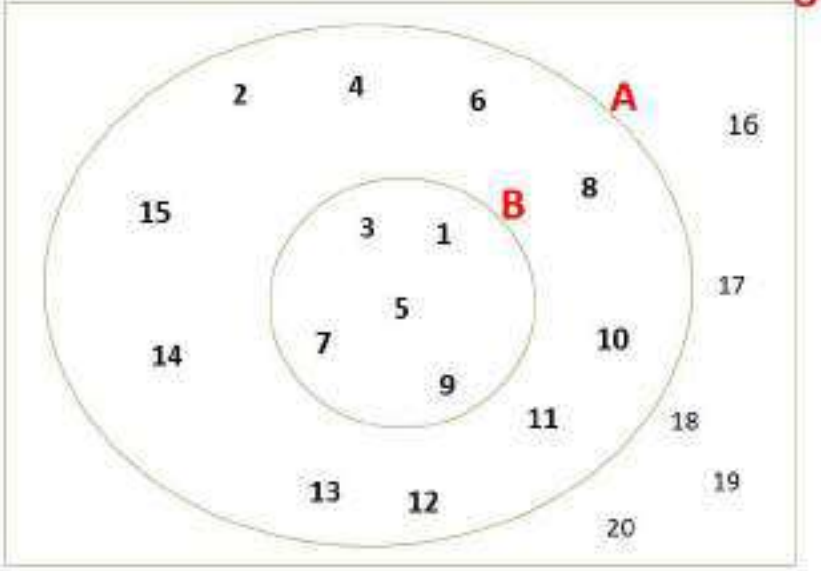
- (i) What is the probability that a team of 11 must include exactly 4 bowlers ?
- (ii) What is the probability that a team of 11 must include at least 4 all-rounders ?

2
2

Note: Give answers in factorial.

MARKING SCHEME**Class - XI****Mathematics**

Q. No.	Key Points	Point Value	Total
1.	(A) 0	1	1
2.	(D) $\frac{1}{2}$	1	1
3.	(C) 48	1	1
4.	(A) 0	1	1
5.	(C) $(0,0) ; \sqrt{\frac{7}{3}}$	1	1
6.	(A) 2	1	1
7.	(A) 14	1	1
8.	(C) ± 1	1	1
9.	(D) 93.32	1	1
10.	(B) $\sqrt{3}$ units	1	1
11.	(C) 100°	1	1
12.	(B) $(-\infty, 2)$	1	1
13.	(C) 4.5	1	1
14.	(C) $\{0,1,2,3,4\}$	1	1
15.	(A) $\frac{3}{2}$	1	1
16.	(D) $5(1 + i)$	1	1
17.	(C) 4^n	1	1
18.	(D) $E \cap F = \phi$	1	1
19.	(B) Both A and R are true but R is not the correct explanation of A.	1	1

20.	(D) A is false but R is true.	1	1		
21.	$ 2p + iq = \frac{ a+ib }{ a-ib }$ $4p^2 + q^2 = 1$	1 1	2		
22.	 <p>B is subset of A i.e $B \subset A$</p>	1 1	2		
23.	<table border="1" data-bbox="243 1249 1218 1690"> <tr> <td data-bbox="243 1249 730 1690"> <p>Left hand limit</p> $= \lim_{x \rightarrow 0^-} \frac{ x }{x}$ <p>let $x = 0 - h$</p> $= \lim_{x \rightarrow 0^-} \frac{ 0-h }{(0-h)}$ $= \lim_{x \rightarrow 0^-} \frac{h}{-h} = -1$ </td> <td data-bbox="730 1249 1218 1690"> <p>Right hand limit</p> $= \lim_{x \rightarrow 0^+} \frac{ x }{x}$ <p>let $x = 0 + h$</p> $= \lim_{x \rightarrow 0^+} \frac{ 0+h }{(0+h)}$ $= \lim_{x \rightarrow 0^+} \frac{h}{h} = 1$ </td> </tr> </table> <p>Since left hand limit of the function is not equal to right hand limit of the function.</p>	<p>Left hand limit</p> $= \lim_{x \rightarrow 0^-} \frac{ x }{x}$ <p>let $x = 0 - h$</p> $= \lim_{x \rightarrow 0^-} \frac{ 0-h }{(0-h)}$ $= \lim_{x \rightarrow 0^-} \frac{h}{-h} = -1$	<p>Right hand limit</p> $= \lim_{x \rightarrow 0^+} \frac{ x }{x}$ <p>let $x = 0 + h$</p> $= \lim_{x \rightarrow 0^+} \frac{ 0+h }{(0+h)}$ $= \lim_{x \rightarrow 0^+} \frac{h}{h} = 1$	1 + ½	2
<p>Left hand limit</p> $= \lim_{x \rightarrow 0^-} \frac{ x }{x}$ <p>let $x = 0 - h$</p> $= \lim_{x \rightarrow 0^-} \frac{ 0-h }{(0-h)}$ $= \lim_{x \rightarrow 0^-} \frac{h}{-h} = -1$	<p>Right hand limit</p> $= \lim_{x \rightarrow 0^+} \frac{ x }{x}$ <p>let $x = 0 + h$</p> $= \lim_{x \rightarrow 0^+} \frac{ 0+h }{(0+h)}$ $= \lim_{x \rightarrow 0^+} \frac{h}{h} = 1$				

	<p>Therefore $\lim_{x \rightarrow 0} f(x)$ does not exist</p> <p style="text-align: center;">OR</p> <p>for $x > \frac{3}{2}$, $f'(x) = 9$ and for $x < \frac{3}{2}$, $f'(x) = 6x$</p> <p>$f'(2) - f'(1) = 9 - 6 = 3$</p>	<p>$\frac{1}{2}$</p> <p>1</p> <p>1</p>	
24.	<p>In Roster form $A = \{(2, 0), (2, 3), (3, 2), (5, 4), (7, -1)\}$</p> <p>Given relation is not a function as 2 has two images 0 and 3. OR</p> <p>$(\frac{f}{g})(x) = \frac{2x^2 + 3x - 5}{x-1}, x \neq 1$</p> <p>Domain = $\mathbb{R} - \{1\}$</p> <p>Now $\frac{2x^2 + 3x - 5}{x-1} = \frac{(2x+5)(x-1)}{x-1} = 2x + 5$</p> <p>Range = $\mathbb{R} - \{7\}$</p>	<p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	2
25.	<p>Coordinates of the point P are (6,7,0) Coordinates of the point Q are (6,7,-8)</p> <p>$PQ = \sqrt{0 + 0 + 8^2} = 8$ units</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p>	2
26.	<p>2 E's Total number of arrangements = $\frac{6!}{2!} = 360$</p> <p>Possible positions of 2 E's I, IV II, V III, VI</p> <p>Total number of cases = 3 The Remaining 4 letters can be arranged in 4! ways Arrangements in which there are exactly 2 letters between 2 E's = $3 \times 4! = 72$</p> <p style="text-align: center;">OR</p> <p>TELANGANA - 3 A's, 2 N's Total permutations = $\frac{9!}{2! 3!} = 30240$</p> <p>When 3 A's are together</p>	<p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p>	3

AAA	TELNGN
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Total 7 units

Number of permutations in which 3 A's are together = $\frac{7!}{2!}$
= 2520

Number of permutations in which 3 A's do not come together
= 30240 - 2520 = 27720

1/2

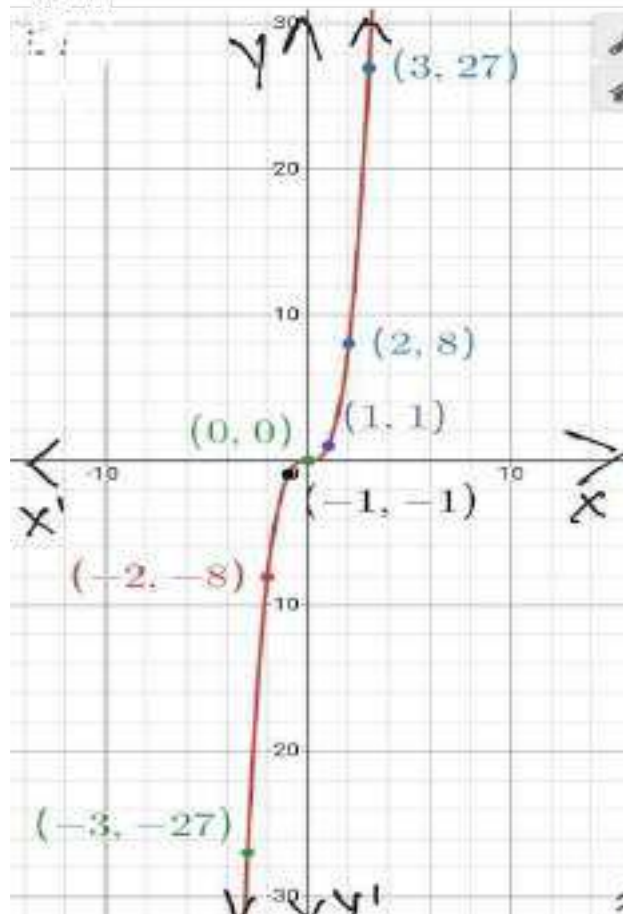
1/2

1/2

1/2

27.

x	-3	-2	-1	0	1	2	3
y	-27	-8	-1	0	1	8	27



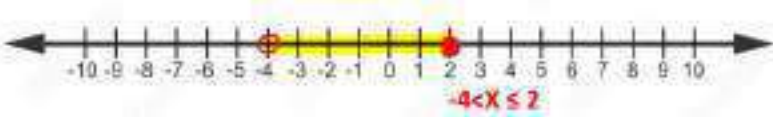
Range = R

1

1

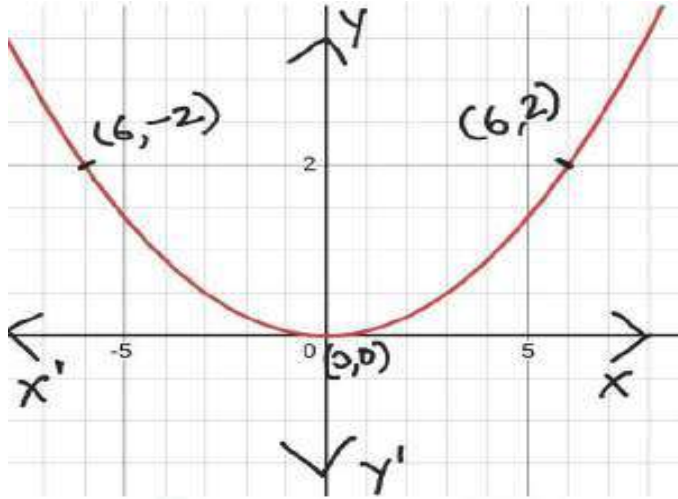
1

3

28.	<table border="1" data-bbox="272 233 1162 384"> <tbody> <tr> <td>x</td> <td>0</td> <td>$\frac{\pi}{6}$</td> <td>$\frac{\pi}{3}$</td> <td>$\frac{\pi}{2}$</td> <td>$\frac{2\pi}{3}$</td> <td>$\frac{5\pi}{6}$</td> <td>π</td> <td>$\frac{7\pi}{6}$</td> <td>$\frac{4\pi}{3}$</td> <td>$\frac{3\pi}{2}$</td> <td>$\frac{5\pi}{3}$</td> <td>$\frac{11\pi}{6}$</td> <td>2π</td> </tr> <tr> <td>y</td> <td>0</td> <td>2</td> <td>3.46</td> <td>4</td> <td>3.46</td> <td>2</td> <td>0</td> <td>-2</td> <td>-3.46</td> <td>-4</td> <td>-3.46</td> <td>-2</td> <td>0</td> </tr> </tbody> </table> <p data-bbox="245 415 784 453">Range = { y : y ∈ R and - 4 ≤ y ≤ 4 }</p>	x	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	π	$\frac{7\pi}{6}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{11\pi}{6}$	2π	y	0	2	3.46	4	3.46	2	0	-2	-3.46	-4	-3.46	-2	0	2 1	3
x	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	π	$\frac{7\pi}{6}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{11\pi}{6}$	2π																		
y	0	2	3.46	4	3.46	2	0	-2	-3.46	-4	-3.46	-2	0																		
29.	<p data-bbox="245 491 740 529">Let x be the pH value for the third day.</p> $8.2 < \frac{8.1+8.6+x}{3} < 8.5$ $24.6 < 16.7 + x < 25.5$ $7.9 < x < 8.8$ <p data-bbox="245 659 911 697">Range of pH value for the third reading is (7.9, 8.8)</p> <p data-bbox="711 770 760 804" style="text-align: center;">OR</p> $4x + 7 > x - 5$ $x > -4$ $12 - 7x \geq -2$ $x \leq 2$ <p data-bbox="245 953 521 991">Solution is $-4 < x \leq 2$</p> 	1/2 1 1 1/2 1/2 1	3																												
30.	$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ $= \lim_{h \rightarrow 0} \frac{\frac{2(x+h)+3}{x+h-2} - \frac{2x+3}{x-2}}{h}$ $= \lim_{h \rightarrow 0} \frac{(2x^2 - 4x + 2hx - 4h + 3x - 6) - (2x^2 + 2hx - 4x + 3x + 3h - 6)}{h(x+h-2)(x-2)}$ $= \lim_{h \rightarrow 0} \frac{-7h}{h(x+h-2)(x-2)}$ $= \frac{-7}{(x-2)^2}$ $f'(x) = \frac{-7}{(x-2)^2}$	1/2 1/2 1 1/2 1/2	3																												

31.

Since the parabola is vertical and has its vertex at origin therefore its equation must be of the form $x^2 = 4ay$



Point (6,2) lies on parabola so

$$36 = 4a(2)$$

$$\Rightarrow a = \frac{36}{8}$$

$$\Rightarrow a = 4.5$$

Ans: Receiver should be placed 4.5 m from the vertex.

Equation of parabola $x^2 = 4ay$

$$x^2 = 4(4.5)y$$

$$x^2 = 18y$$

OR

Arch is in the form of a semi-ellipse, 8m wide and 2m high.

Length of major axis = $2a$

$$\Rightarrow 8 = 2a$$

$$\Rightarrow 4 = a$$

Here Length of Minor axis $b = 2$

Equation of semi-ellipse is

$$\frac{x^2}{4^2} + \frac{y^2}{2^2} = 1 \Rightarrow \frac{x^2}{16} + \frac{y^2}{4} = 1$$

$\frac{1}{2}$

1

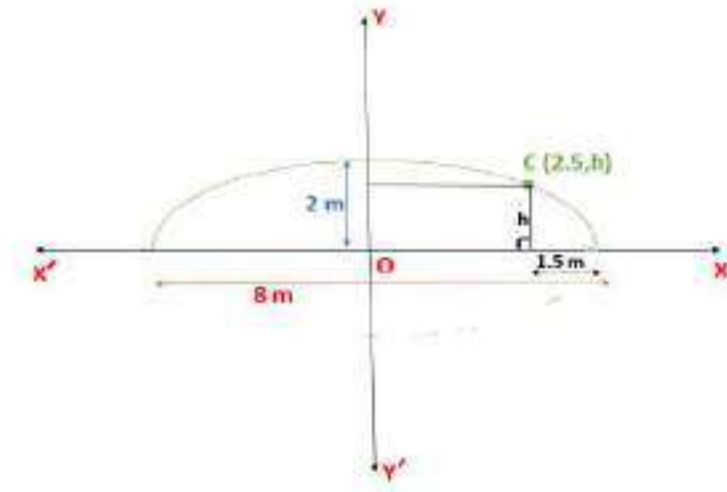
$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

3

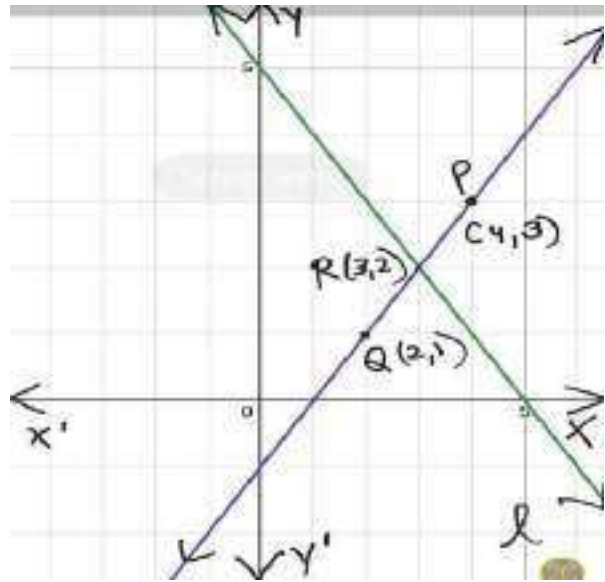
1



$AB = 1.5 \text{ m}$
 $\Rightarrow OA = 4 - 1.5 = 2.5 \text{ m}$
 Let $CA = h$
 Therefore coordinates of C are $(2.5, h)$ and it lies on the ellipse
 $\Rightarrow \frac{(2.5)^2}{16} + \frac{h^2}{4} = 1 \Rightarrow h^2 = \frac{9.75}{4} \Rightarrow h^2 = 2.44 \text{ (approx.)}$
 $\Rightarrow h = \sqrt{2.44} \text{ or } 1.56 \text{ m (approx)}$

$\frac{1}{2}$
 $\frac{1}{2}$
 $\frac{1}{2}$
 $\frac{1}{2}$

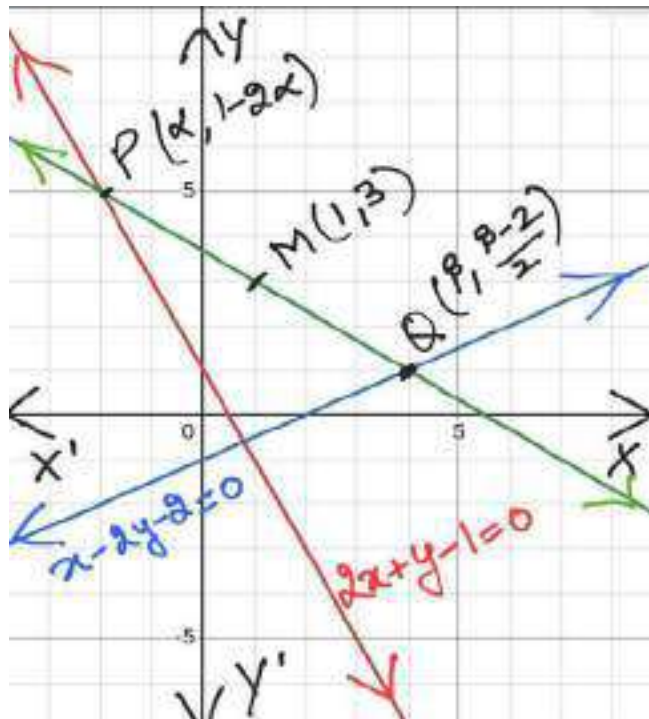
32.



Let the points $(4, 3)$ and $(2, 1)$ be represented by P and Q respectively and the image of P is Q.
 Let the points $(4, 3)$ and $(2, 1)$ be represented by P and Q respectively and the

5

	<p>image of P is Q.</p> <p>By using midpoint formula coordinates of point R which lies on line are (3,2).</p> <p>Slope of PQ = $\frac{1-3}{2-4} = \frac{-2}{-2} = 1$</p> <p>Since PQ is perpendicular to line l therefore</p> <p>slope of line = -1</p> <p>Equation of line l</p> $y - y_1 = m(x - x_1)$ $y - 2 = -1(x - 3)$ $\Rightarrow x + y - 5 = 0$ <p>Line $3x + 3y + k = 0$ can be written as $x + y + \frac{k}{3} = 0$ which is parallel to the line l</p> <p>Therefore, $\frac{ c_1 - c_2 }{\sqrt{1+m^2}} = \frac{14}{\sqrt{2}}$</p> $\Rightarrow \frac{ \frac{k}{3} + 5 }{\sqrt{2}} = \frac{14}{\sqrt{2}}$ $\Rightarrow \frac{k}{3} + 5 = \pm 14$ $\Rightarrow \frac{k}{3} = 9 \text{ or } \Rightarrow \frac{k}{3} = -19$ $\Rightarrow k = 27 \text{ or } k = -57$ <p style="text-align: center;">OR</p> <p>Given lines are $2x + y - 1 = 0$ -----(1)</p> <p style="padding-left: 40px;">and $x - 2y - 2 = 0$ -----(2)</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p>	
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½ Fig

5

Let the required line intersects the given lines (1) and (2) at the points P $(\alpha, 1 - 2\alpha)$ and Q $(\beta, \frac{\beta-2}{2})$ respectively.(figure ↑)

1

We are given that the midpoint of the segment PQ is M(1,3) therefore,using midpoint formula

$$\frac{\alpha+\beta}{2} = 1 \quad \text{and} \quad \frac{1-2\alpha+\frac{\beta-2}{2}}{2} = 3$$

½

$$\Rightarrow \alpha + \beta = 2 \quad \text{and} \quad -4\alpha + \beta = 12$$

1

On solving above equations,we get

$$\alpha = -2 \quad \text{and} \quad \beta = 4$$

1

Equation of required line passing through P(-2,5) and M(1,3) is

$$y - 5 = \frac{3-5}{1+2} (x + 2)$$

$$y - 5 = \frac{-2}{3} (x + 2)$$

$$3y - 15 = -2x - 4$$

$$2x + 3y = 11$$

1

33.

<i>C.I.</i>	<i>f_i</i>	<i>x_i</i>	<i>y_i</i>	<i>f_iy_i</i>	<i>f_iy_i²</i>
10-20	5	15	-2	-10	20
20-30	8	25	-1	-8	8
30-40	8	35 → <i>a</i>	0	0	0
40-50	15	45	1	15	15
50-60	14	55	2	28	56
	Σ <i>f_i</i> = 50 Or N=50			Σ <i>f_iy_i</i> = 25	Σ <i>f_iy_i²</i> = 99

2 marks
For table**Mean**

$$\bar{x} = a + \frac{\Sigma f_i y_i}{\Sigma f_i} \times h$$

$$\Rightarrow \bar{x} = 35 + \frac{25}{50} \times 10$$

$$\Rightarrow \bar{x} = 35 + 5 = 40$$

1 mark
for
mean**Variance**

$$\sigma^2 = \frac{h^2}{N^2} (N \Sigma f_i y_i^2 - (\Sigma f_i y_i)^2)$$

$$\Rightarrow \sigma^2 = \frac{10^2}{50^2} (50 \times 99 - (25)^2)$$

$$\Rightarrow \sigma^2 = \frac{100}{2500} (4950 - 625)$$

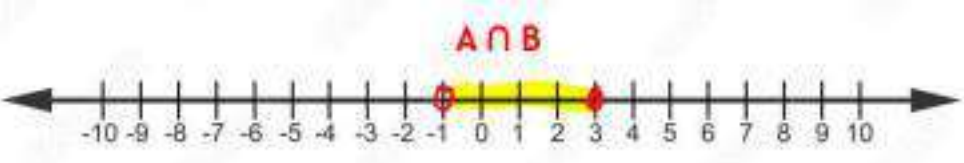
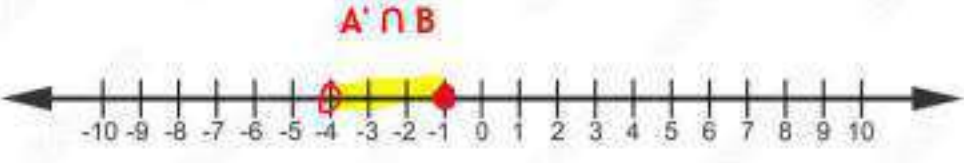
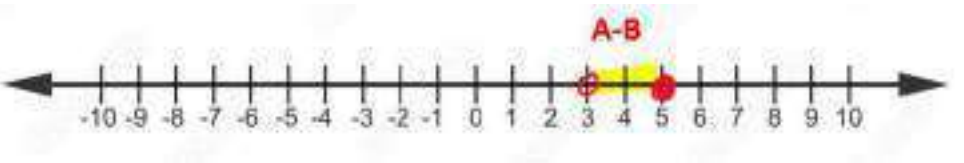
$$\Rightarrow \sigma^2 = \frac{1}{25} (4325) = 173$$

2 marks
For
Variance

OR


$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

	$\Rightarrow \sum x_i = n\bar{x} = 100 \times 4 = 4000$ $\sigma_x^2 = \frac{1}{n} \sum_{i=1}^n x_i^2 - (\bar{x})^2$ $\Rightarrow \sum_{i=1}^n x_i^2 = n[\sigma^2 + (\bar{x})^2]$ $= 100(26.01 + 1600)$ $= 162601$ <p>Corrected $\sum x_i = 4000 - 50 + 40 = 3990$</p> <p>Corrected $\sum x^2 = 162601 - (50)^2 + (40)^2 = 161701$</p> <p>Corrected Mean = $\frac{3990}{100} = 39.9$</p> <p>Corrected $\sigma_x^2 = \frac{161701}{100} - (39.9)^2 = 25$</p> <p>Corrected Standard Deviation = 5</p>	<p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>	
34.	$(x + 3)^5 = x^5 + 15x^4 + 90x^3 + 270x^2 + 405x + 243$ $(2 - x)^6$ $= 64 - 192x + 240x^2 - 160x^3 + 60x^4 - 12x^5 + x^6$ <p>Coefficient of x^5</p> $= 1(64) - 15(192) + 90(240) - 270(160) + 405(60) - 243(12)$ $= 64 + 21600 + 24300 - (2880 + 43200 + 2916)$ $= 45964 - 48996$ $= -3032$	<p>$1\frac{1}{2}$</p> <p>$1\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>	5

35.	<p>(i) $A \cap B = \{x : -1 < x \leq 3, x \in \mathbb{R}\}$</p>  <p>(ii) $A' \cap B = \{x : -4 < x \leq -1, x \in \mathbb{R}\}$</p>  <p>(iii) $A - B = \{x : 3 < x \leq 5, x \in \mathbb{R}\}$</p> 	<p>$\frac{1}{2}$</p> <p>1</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p>	5
36.	<p>(i) $\sin(90^\circ + 45^\circ) = \cos 45^\circ = \frac{1}{\sqrt{2}}$</p> <p>(ii) 225°, SW</p> <p>(iii)(a) $\theta = \frac{\pi}{6}$</p> <p>$l = r\theta$</p> <p>$\Rightarrow r = \frac{66}{\pi}$</p> <p>$= 21 \text{ cm}$</p> <p>OR</p> <p>(iii)(b) $l = r\theta$</p> <p>$\Rightarrow 22 = 10\theta$</p> <p>$\Rightarrow \theta = \frac{22}{10} \text{ radians}$</p> <p>$= \frac{22}{10} \times \frac{180}{\pi} = 126^\circ$</p>	<p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p>	4

37.	<p>(i) 1,2,4,8,... Sequence is G.P.</p> <p>(ii) Number of nuclei in 10th generation = 2^9 = 512</p> <p>(iii)(a) Total number of neutrons produced till 7th generation = $1 \frac{1(2^7 - 1)}{2 - 1}$ = 127</p> <p style="text-align: center;">OR</p> <p>(iii)(b) $2^{m-1} - 2^{n-1} = 96$ $128 - 32 = 96$ $\therefore m = 8$ and $n = 6$</p>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 1 $\frac{1}{2}$ $\frac{1}{2}$ 1	4
38.	<p>(i) $\frac{C(8,4) C(12,7)}{C(20,11)}$</p> $= \frac{\frac{8!}{4! \times 4!} \times \frac{12!}{7! \times 5!}}{\frac{20!}{11! \times 9!}}$ <p>(ii) $\frac{C(5,4) C(15,7) + C(5,5) C(15,6)}{C(20,11)}$</p> $= \frac{\frac{5!}{4!} \times \frac{15!}{7! \times 8!} + \frac{15!}{6! \times 9!}}{\frac{20!}{11! \times 9!}}$	1 1 1 1	4

CLASS XI BUSINESS STUDIES (054) SAMPLE QUESTION PAPER (2024-25)		
MM – 80	TIME: 3 HOURS	
<p>General instructions :</p> <ol style="list-style-type: none"> 1. This question paper contains 34 questions. 2. Marks are indicated against each question. 3. Answers should be brief and to the point. 4. Answers to the questions carrying 3 marks may be from 50 to 75 words. 5. Answers to the questions carrying 4 marks may be about 150 words. 6. Answers to the questions carrying 6 marks may be about 200 words. 7. Attempt all parts of the question together. 		
1.	<p>Assertion (A): Though WTO is a successor to GATT, it is much more powerful body than GATT. Reason (R): It governs trade not only in goods but also in services and intellectual property rights (IPR).</p> <ol style="list-style-type: none"> a) Both A & R are true, But R is not the correct explanation of A. b) Both A & R are false. c) A is true, but R is false. d) Both A & R are true and R is the correct explanation of A. 	1
2.	<p>Select the type of hundi where the merchant on whom the hundi is drawn has to have certain level of creditworthiness in the market.</p> <ol style="list-style-type: none"> a) Nam-jog Hundi b) Sahyog –Hundi c) Dhani- jog Hundi d) Furman- jog Hundi 	1
3.	<p>According to section 464 of _____ maximum number of partners in a partnership firm can be 100, But as per the Companies Rules 2014, the maximum of members in partnership can be _____.</p> <ol style="list-style-type: none"> a) Companies Act 2013, 50 b) Partnership Act 1932, 50 c) Companies Act 2013, 200 d) Partnership Act 1932, 200 	1

4.	<p>Infer the correct option from the following statements, that doesn't hold true about 'Trade Credit'.</p> <p>a) It appears in the records of the buyer firm as 'accounts payable'</p> <p>b) It depends upon the financial strength of the seller</p> <p>c) Large amount of funds can be generated through trade credit</p> <p>d) It depends upon the reputation of the buyer</p>	1										
5.	<p>Identify the service highlighted in the picture.</p>  <p>a) Banking</p> <p>b) Communication</p> <p>c) Insurance</p> <p>d) Advertisement</p>	1										
6.	<p>Match the columns and choose the correct alternatives:</p> <table border="1" data-bbox="277 1140 1398 1331"> <thead> <tr> <th data-bbox="277 1140 1170 1182">Column I</th> <th data-bbox="1170 1140 1398 1182">Column II</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 1182 1170 1220">A. Protects the scientific Inventions</td> <td data-bbox="1170 1182 1398 1220">i. Copyright</td> </tr> <tr> <td data-bbox="277 1220 1170 1257">B. A right conferred upon the creators of a Cinematographer</td> <td data-bbox="1170 1220 1398 1257">ii. Trademark</td> </tr> <tr> <td data-bbox="277 1257 1170 1295">C. Protection given to aesthetic appearance</td> <td data-bbox="1170 1257 1398 1295">iii. Patent</td> </tr> <tr> <td data-bbox="277 1295 1170 1331">D. Helps in distinguishing similar products</td> <td data-bbox="1170 1295 1398 1331">iv. Design</td> </tr> </tbody> </table> <p>a) A – iv, B – iii, C – i, D – ii</p> <p>b) A – ii, B – iv, C – i, D – iii</p> <p>c) A – iii, B – i, C – iv, D – ii</p> <p>d) A – iii, B – iv, C – ii, D – i</p>	Column I	Column II	A. Protects the scientific Inventions	i. Copyright	B. A right conferred upon the creators of a Cinematographer	ii. Trademark	C. Protection given to aesthetic appearance	iii. Patent	D. Helps in distinguishing similar products	iv. Design	1
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A. Protects the scientific Inventions	i. Copyright											
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C. Protection given to aesthetic appearance	iii. Patent											
D. Helps in distinguishing similar products	iv. Design											
7.	<p>The funds required by 'Meesho' to advertise in the newspapers are an example of_____.</p> <p>a) Ploughing back of profits</p> <p>b) Trade credit</p> <p>c) Fixed capital requirements</p> <p>d) Working capital requirements</p>	1										

8.	<p>Malkeet Kaur has initiated a food chain specializing in different varieties of baked snacks in India with branches in Delhi, Ahmedabad and Indore. She managed the initial capital for starting the business by investing her personal savings and resources. Recognize the funding method used by Malkeet Kaur for her startup.</p> <p>(a) Venture capital (b) Angel investment (c) Crowd funding (d) Bootstrapping</p>	1
9.	<p>The society aims to fight against the big capitalists and enhance the bargaining power of the small producers. Select the type of cooperative society highlighted in above case</p> <p>a) Consumers cooperative societies b) Marketing cooperative societies c) Producers cooperative societies d) Farmers' cooperative societies</p>	1
10.	<p>_____ is an acknowledgment that a company has borrowed a certain amount of money which it promises to repay at a future date.</p> <p>a) Debenture b) Public Deposits c) Inter corporate deposits d) Loan from Commercial Banks</p>	1
11.	<p>Name the segment in which Flipkart and Amazon belongs to.</p> <p>a) B2B Commerce b) B2C Commerce c) C2C Commerce d) Intra-B Commerce</p>	1
12.	<p>The capital of the company is divided into number of parts each of which is called _____.</p> <p>a) Dividend b) Profit c) Interest d) Share</p>	1
13.	<p>Indicate the type of trade which aims at equitable distribution of goods within a nation, speedily and at a reasonable cost.</p> <p>a) Internal trade b) Wholesale trade c) Retail trade d) External trade</p>	1

14	<p>Select the correct option that doesn't fall within the scope of geographical indication.</p> <ul style="list-style-type: none"> a) Handicrafts b) Food stuff c) Agricultural Products d) Bottles 	1
15	<p>From the following statements, choose the correct option referring to example of insurable interest.</p> <ul style="list-style-type: none"> (1) Trustee holding the property on the behalf of others. (2) A company insuring the life of brand ambassador. (3) Father taking insurance policy on the life of his son. (4) Ms. Harshita taking insurance policy in the name of her friend. <ul style="list-style-type: none"> a) 1, 2, 3 are correct but 4 is incorrect. b) 1 and 2 are incorrect but 3 and 4 are correct. c) 1 is incorrect but 2, 3 and 4 are correct. d) 1, 4 are correct and 3, 2 are incorrect. 	1
16	<p>Memorize the service offered by the retailer which helps them to manage their business with relatively small amount of working capital.</p> <ul style="list-style-type: none"> a) Availability of goods. b) Grant of credit c) Specialized knowledge d) Sharing of risk 	1
17	<p>Identify the product that people are most likely to be uncomfortable buying on the Internet.</p> <ul style="list-style-type: none"> a) Books b) Movies c) Furniture d) Medicines 	1
18	<p>Read the following statements carefully and choose the correct alternative:</p> <p>Statement I: Bill of Lading is also a document of title to the goods and as such is freely transferable by the endorsement and delivery.</p> <p>Statement II: Like a Bill of Lading, an Airway Bill is a document wherein an airline company gives its official receipt of the goods on board its aircraft and at the same time gives an undertaking to carry them to the port of destination.</p> <ul style="list-style-type: none"> a) Both the statements are true. b) Both the statements are false. c) Statement I is true, Statement II is false. d) Statement II is true, Statement I is false. 	1

19	<p>It simply earns an income by investing in shares, bonds, bills, or notes in a foreign country or providing loans to foreign business firms</p> <p>a) Foreign investment b) Portfolio investment c) Foreign Direct Investment d) Cross licensing</p>	1
20	<p>_____ type of GST is payable on all interstate supply of goods and services.</p> <p>a) IGST b) FGST c) CGST d) DSGST</p>	1
21.	<p>(A) The Department of Posts (DoP), trading as India Post, is a government-operated postal system in India, which is part of the Ministry of Communications under Government of India. It was formed on 1st October 1854.</p> <p>a) Identify the type of public sector enterprise which has been described above b) Describe any two features of this form of organisation other than the one which have been mentioned in the given paragraph.</p> <p style="text-align: center;">OR</p> <p>(B) NTPC is carrying on various projects of energy and power. Majority of its shares are held by the government of India. It was registered under the previous Companies Act. It enjoys all the characteristics of a company. The boards of directors are appointed by the government. The Board and shareholders are responsible for the efficient working of the company. The company prepares its annual report and submits to the appropriate authorities.</p> <p>a) Name the type of public sector enterprise referred to in the above para. b) State any two features of the type of public sector enterprise identified in part (a).</p>	3
22.	<p>(A) Differentiate between Life , Fire and Marine Insurance on any three basis</p> <p style="text-align: center;">OR</p> <p>(B) Categories any three types of telecom services</p>	3
23.	<p>Hari tells Mohan in the presence of Keshav that Keshav is the partner in the firm of Hari Enterprises. Keshav shows no objection to the statement of Hari. Mohan gives a loan of ₹ 50,000 to Hari Enterprises under the impression that Keshav is a partner in the firm. Later on, Hari enterprise was unable to repay the loan to Mohan. Therefore, Mohan filed a suit against Keshav to repay the loan. In return Keshav refused to repay the loan on the ground that he is not a partner in Hari Enterprises. But court took decision in the favour of Mohan as Keshav knowingly allowed himself to be represented as a partner in the firm.</p> <p>a) Identify and explain the type of partner being highlighted in the above case. b) Mention the way-out through which Keshav can get away from the claim of Mohan.</p>	3

24.	<p>Healtho Ltd.' is a popular health management company offering a wide range of healthcare products to the customers. Two years back, the company started a series of online fitness classes and this segment of business has been a big hit right from its inception. It has helped the company to make huge profits. By taking into consideration, the requests from many of its regular clients, the company has now decided to start fitness centres at five strategic locations within the country. The management of the company has decided to use the portion of their undistributed earnings to finance the new business venture.</p> <p>Identify and explain any two merits and one limitation of the source of business finance that the company intends to use for financing its expansion plans.</p>	3
25.	<p>Three friends Arun, Tarun and Varun are engaged in different types of activities to earn their livelihood. Arun describes his occupation by saying that, transfer of interest is not possible in case of my occupation and at the same time it does not require any capital investment." Tarun remarks," in my occupation also transfer of interest is not possible, but one needs to possess high degree of specialized knowledge in a particular field." Varun shares that, in his occupation transfer of interest is possible with some formalities and also capital investment is essential. In context of the above case:</p> <p>(a) Identify the different types of economic activities in which Tarun and Varun are involved.</p> <p>(b) Give any three points of difference that have not been mentioned in the above para between the activities in which Tarun and Varun are involved.</p>	4
26.	<p>(A) Explain the meaning and three advantages of 'Mail Order House'.</p> <p style="text-align: center;">OR</p> <p>(B) Explain the meaning and three limitations of 'Chain Stores'</p>	4
27.	<p>Latha has decided to persue a Startup Venture to offer organic pet food. She has already done a self-introspection to be assured of her potential in the concerned field. Furthermore, she has conducted an online research with participation of pet owners, regarding the extent to which the need for availability of organic pet food is unsatisfied.</p> <p>a) Identify the concept through which Latha decided to persue its set up.</p> <p>b) State the three features of the concept identified.</p>	4
28.	<p>Identify the following documents of external trade:</p> <p>a) This receipt is given by the commanding officer of the ship to the exporter after the cargo of loaded on the ship.</p> <p>b) A statement of the no. of cases/packs and the details of the goods contained in these packs.</p> <p>c) It is a written instrument whereby the person issuing the instrument directs the other party to pay a specified amount to a certain person / the bearer of the instrument.</p> <p>d) It is also known as a vehicle / gate pass.</p>	4

29.	The conduct of industry, trade and commerce using the computer networks is gaining popularity now days. Identify the concept highlighted in the given statement and also state its three benefits.	4
30.	(A) The businessmen are responsible for aggravating pollution, so it becomes the moral duty of businessmen to take some positive steps for controlling this problem." In the light of this statement, explain the role of businessmen in environmental protection. OR (B) Business assumes various responsibilities towards different interested groups. Explain such responsibilities towards government and consumers.	4
31.	(A) Radhika Ltd. has good growth prospects. So it is planning to expand its business. For this the company needs additional funds. The finance manager reports that the company's assets are free to be mortgaged for the purpose of borrowings. However, the existing owners have to dilute their voting powers. a) Suggest and explain the source of finance most suitable for Radhika Ltd. b) Explain the advantages of the source of finance identified above. OR (B) Mayur is running a business enterprise needs financial, technical and managerial services for the smooth functioning of his business enterprise. He went to an institution that provides medium and long term finance also aims at promoting industrial development of the country and conduct market services for his convenience. a) Recognize the appropriate source of finance discussed in above. b) Write five merits of the source identified in part (a)	6
32.	(A) Mohit started buying goods from Germany. He collected information about export price and terms of export. He got registered with the DGFT & obtained an IEC number. Discuss the next four steps he needs to undertake before buying goods from Germany. OR (B) "The Government has passed export quality control and inspection act 1963 for compulsory inspection of certain products by a competent agency as designated by the government for exporting goods". Enumerate the four steps that immediately precedes the step mentioned in above statement	6
33.	Master Ltd., a foreign company, started its business in an under-developed country. The size of the business is quite large. The company has plenty of resources. It employs thousands of people in the under-developed country. The raw materials used by the company are readily available here. However, since there was not demand for these raw materials here, the producers were unable to get the best price for it. Due to this reason, the producers were discouraged. Some local businessmen used to act arbitrarily earlier, but now they have corrected themselves. The reason for their becoming better is competition with the foreign company. Now their arbitrary approach has ended	6

	<p>altogether. Master Ltd. is using completely the latest technology in its various business activities. As a result, the local people also have got the opportunity to learn the new technology. Because of using the modern technology and doing production at a large scale, the company's cost of production is very low. Because of its huge size and status, the company occupied a dominant position in the market and took over some domestic firms.</p> <p>a) Identify and explain the type of business enterprise is referred to in the above para</p> <p>b) Also explain any three features of the enterprise identified in (a) by quoting the lines from the above para.</p>	
34.	<p>Axis Ltd. made an application for registration to the registrar of the company on 3rd March 2024, with an objective of manufacturing jute bags to sell it with in the country. The registrar issued the document on 8th of March, mentioning the date of 5th March on it. Later on it was discovered that company had already entered into a contract with Alia Ltd. On 4th March, which it couldn't complete and Alia Ltd. filed a suit against the company and also questioned on the existence of Axis Ltd. But the court refused the claim of Alia Ltd.</p> <p>a) Mention the document of formation of company is highlighted here.</p> <p>b) Identify and explain the type of contract in which Axis Ltd. Has entered.</p> <p>c) Why the claim of Alia Ltd. was refused by the court of law. Explain by quoting lines from case.</p>	6

CLASS -XI
BUSINESS STUDIES (054)
Sample Paper (2024-25)

Maximum Marks: 80

Marking Scheme/Hints to solutions

[Note: Any other relevant answer, not given here under but given by the candidates, be suitably awarded.]

Q.No	Value points/ Key points	Marks allotted to each key point	Total marks
1.	d) Both A & R are true and R is the correct explanation of A.	1	(1)
2.	b) Sahyog –Hundi	1	(1)
3.	a) Companies Act, 2013, 50	1	(1)
4.	c) Large amount of funds can be generated through trade credit	1	(1)
5.	c) Insurance	1	(1)
6.	c) A – iii, B – i, C – iv, D – ii	1	(1)
7.	d) working capital requirements	1	(1)
8.	d) Bootstrapping	1	(1)
9.	c) Producers cooperative societies	1	(1)
10.	a) Debenture	1	(1)
11.	b) B2C Commerce	1	(1)
12.	d) Share	1	(1)
13.	a) Internal trade	1	(1)
14.	d) Bottles	1	(1)
15.	a) 1, 2, 3 are correct but 4 is incorrect.	1	(1)
16.	b) Grant of credit	1	(1)
17.	c) Furniture	1	(1)
18.	a) Both the statements are true	1	(1)
19.	b) Portfolio Investment	1	(1)
20.	a) IGST	1	(1)
21.	a. Departmental Undertaking b. Features:- The funding of these enterprises come directly from the Government Treasury and are an annual appropriation from the budget of the Government. The revenue earned by these is also paid into the treasury; (ii) They are subject to accounting and audit controls applicable to	1 mark for identification + 1 mark for each feature	(3)

	<p>other Government activities;</p> <p>(iii) The employees of the enterprise are Government servants and their recruitment and conditions of service are the same as that of other employees directly under the Government. They are headed by Indian Administrative Service (IAS) officers and civil servants who are transferable from one ministry to another;</p> <p>(iv) It is generally considered to be a major subdivision of the Government department and is subject to direct control of the ministry;</p> <p>(v) They are accountable to the ministry since their management is directly under the concerned ministry. (Any Two)</p> <p style="text-align: center;">OR</p> <p>a. Government Company</p> <p>b. Features:-</p> <p>(i) It is an organisation created under the Companies Act, 2013 or any other previous Company Law.</p> <p>(ii) The company can file a suit in a court of law against any third party and be sued;</p> <p>(iii) The company can enter into a contract and can acquire property in its own name;</p> <p>(iv) The management of the company is regulated by the provisions of the Companies Act, like any other public limited company;</p> <p>(v) The employees of the company are appointed according to their own rules and regulations as contained in the Memorandum and Articles of Association of the company. The Memorandum and Articles of Association are the main documents of the company, containing the objects of the company and its rules and regulations; (any other suitable point)</p>	<p>1 mark for identification + 1 mark for each benefit</p>	
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22.	a)				1 mark for each difference	(3)
Basis	Life Insurance	Fire Insurance	Marine Insurance			
Subject Matter	The subject matter of insurance is human life.	The subject matter is any physical property or assets	The subject matter is a ship, cargo or freight.			
Element	Life Insurance has the elements of protection and investment or both.	Fire insurance has only the element of protection and not the element of	Marine insurance has only the element of protection			

			investment.			
	Insurable interest	Insurable interest must be present at the time of affecting the policy but need not be necessary at the time when the claim falls due.	Insurable interest on the subject matter must be present both at the time of effecting policy as well as when the claim falls due	Insurable interest must be present at the time when claim falls due or at the time of loss only.		
(ANY OTHER RELEVANT DIFFERENCE)						
OR						
<p>i) Cellular mobile services: These are all types of mobile telecom services including voice and non-voice messages, data services and PCO services utilizing any type of network equipment within their service area. They can also provide direct inter connectivity with any other type of telecom service provider.</p> <p>(ii) Fixed line services: These are all types of fixed services including voice and non-voice messages and data services to establish linkages for long distance traffic. These utilize any type of network equipment primarily connected through fiber optic cables laid across the length and breadth of the country. The also provide inter connectivity with other types of telecom services.</p> <p>(iii) Cable services: These are linkages and switched services within a licensed area of operation to operate media services, which are essentially one-way entertainment related services. The two-way communication including voice, data and information services through cable network would emerge significantly in the future. Offering services through the cable network would be similar to providing fixed services ; (any other suitable point)</p>					½ mark	fo
					reach	fo
					heading + ½	mark
					fo	replanation
23.	<p>a) Partner by holding out: A partner by 'holding out' is a person who though is not a partner in a firm but knowingly allows him/her to be represented as a partner in a firm. Such a person becomes liable to outside creditors for repayment of any debts which have been extended to the firm on the basis of such representation.</p>				1 mark for identification + 1mark each for explanation	(3)

	<p>b) In case he is not really a partner and wants to save himself from such a liability, he should immediately issue a denial, clarifying his position that he is not a partner in the firm. If he does not do so, he will be responsible to the third party for any such debts.</p>														
24.	<p>Retained earnings as a source of funds has the following merits</p> <p>(i) Retained earnings is a permanent source of funds available to an organisation.</p> <p>(ii) It does not involve any explicit cost in the form of interest, dividend or floatation cost.</p> <p>Retained earnings as a source of funds has the following limitations:</p> <p>(i) Excessive Ploughing back may cause dissatisfaction amongst the shareholders as they would get lower dividends. (any other suitable point)</p>	1 mark for each explanation	(3)												
25.	<p>a) Varun – Business, Tarun- Profession</p> <p>b) The difference between business and profession is as follow:</p> <table border="1" data-bbox="203 926 1141 1409"> <thead> <tr> <th>Basis</th> <th>Business</th> <th>Profession</th> </tr> </thead> <tbody> <tr> <td>Mode of establishment</td> <td>Entrepreneur's decision and other legal formalities, if necessary</td> <td>Membership of a Professional body and certificate of practice</td> </tr> <tr> <td>Nature of work</td> <td>Provision of goods and services to the public</td> <td>Rendering of personalized, expert services</td> </tr> <tr> <td>Return</td> <td>Profit earned</td> <td>Professional fee</td> </tr> </tbody> </table> <p>(ANY OTHER RELEVANT DIFFERENCE)</p>	Basis	Business	Profession	Mode of establishment	Entrepreneur's decision and other legal formalities, if necessary	Membership of a Professional body and certificate of practice	Nature of work	Provision of goods and services to the public	Rendering of personalized, expert services	Return	Profit earned	Professional fee	<p>½ mark for each identification</p> <p>1 mark for each difference</p>	(4)
Basis	Business	Profession													
Mode of establishment	Entrepreneur's decision and other legal formalities, if necessary	Membership of a Professional body and certificate of practice													
Nature of work	Provision of goods and services to the public	Rendering of personalized, expert services													
Return	Profit earned	Professional fee													

27.	<p>a) Entrepreneurship is the process of setting up one's own business as distinct from pursuing any other economic activity, be it employment or practicing some profession.</p> <p>b) The following are the characteristics of entrepreneurship: (i) Systematic Activity: Entrepreneurship is not a mysterious gift or charm and something that happens by chance! It is a systematic, step-by-step and purposeful activity. It has certain temperamental, skill and other knowledge and competency requirements that can be acquired, learnt and developed, both by formal educational and vocational training as well as by observation and work experience. Such an understanding of the process of entrepreneurship is crucial for dispelling the myth that entrepreneurs are born rather than made.</p> <p>(ii) Lawful and Purposeful Activity: The object of entrepreneurship is lawful business. It is important to take note of this as one may try to legitimize unlawful actions as entrepreneurship on the grounds that just as entrepreneurship entails risk, so does illicit businesses. Purpose of entrepreneurship is creation of value for personal profit and social gain.</p> <p>(iii) Innovation: From the point of view of the firm, innovation may be cost saving or revenue-enhancing. If it does both it is more than welcome. Even if it does none, it is still welcome as innovation must become a habit!</p> <p>Entrepreneurship is creative in the sense that it involves creation of value. By combining the various factors of production, entrepreneurs produce goods and services that meet the needs and wants of the society. Every entrepreneurial act results in income and wealth generation. Entrepreneurship is creative also in the sense that it involves innovation-introduction of new products, discovery of new markets and sources of supply of inputs, technological breakthroughs as well as introduction of newer organisational forms for doing things better, cheaper, faster and, in the present context, in a manner that causes the least harm to the ecology/ environment.</p>	1 mark for identification + 1 mark for each feature.	(4)
28.	<p>a) Mate receipt b) Packaging list c) Bill of exchange d) Cart Ticket</p>	1 mark for each point	(4)
29.	<p>E- Business Benefits: i) Ease of formation and lower investment requirements (ii) Convenience (iii) Speed (iv) Global reach/access (v) Movement towards a paperless society (any three)</p>	1 mark for identification ½ mark for each heading and ½ mark for explanation	(4)

	are, therefore, free to be mortgaged for the purpose of borrowings, if the need be;		
32.	<p>1. Obtaining foreign exchange 2.Placing order or indent 3.Obtaining letter of credit 4.Arranging for finance (with suitable explanation)</p> <p style="text-align: center;">OR</p> <p>1. Production or procurement of goods 2. obtaining pre shipment finance 3. Obtaining export license 4. Assessing the importer’s creditworthiness and securing a guarantee for payments (with suitable explanation)</p>	<p>½ mark for heading + 1½ mark for each explanation</p> <p>½ mark each heading and 1½ mark for explanation</p>	(6)
33.	<p>a) Global enterprise/ Multinational corporation/ transnational corporations</p> <p>b) 1. Huge capital resources: “<i>The company has plenty of resources.</i>” 2. Advanced technology: “<i>Master Ltd. is using completely the latest technology in its various business activities</i>” 3. Expansion of market territory: “<i>the company occupied a dominant position in the market and took over some domestic firms</i>”</p>	<p>½ mark for identification + 1 mark for explanation + ½ mark each for quoting the line + ½ mark for heading + ½ mark for each explanation</p>	(6)
34.	<p>a) Certificate of incorporation</p> <p>b) Preliminary Contracts: During the promotion of the company, promoters enter into certain contracts with third parties on behalf of the company. These are called preliminary contracts or pre-incorporation contracts. These are not legally binding on the company.</p> <p>c) The Certificate of Incorporation is a conclusive evidence of the regularity of the incorporation of a company. The Certificate of Incorporation once issued, is a conclusive evidence of the existence of the company. Even when a company gets registered</p>	<p>1mark for Identification</p> <p>+ 1 mark of identification +1mark for each explanation+ 2 marks for explanation+ 1 mark for quoting lines</p>	(6)

	<p>with illegal objects, the birth of the company cannot be questioned. The only remedy available is to wind it up. Because the Certificate of Incorporation is so crucial, the Registrar has to go very carefully before issuing it.</p> <p><i>“The registrar issued the document on 8th of March, mentioning the date of 5th March on it”.</i></p>		
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प्रतिदर्श प्रश्नपत्र 2024-25

विषय : हिंदी (आधार)

(विषय कोड - 302)

कक्षा - ग्यारहवीं

निर्धारित समय : 3 घंटे

अधिकतम अंक : 80

सामान्य निर्देश :

- निम्नलिखित निर्देशों को बहुत सावधानी से पढ़िए और उनका पालन कीजिए :-
- यह प्रश्न-पत्र तीन खंडों में विभाजित है।
- खंड - क में अपठित बोध पर आधारित प्रश्न पूछे गए हैं। सभी प्रश्नों के उत्तर देना अनिवार्य है।
- खंड - ख में पाठ्यपुस्तक अभिव्यक्ति और माध्यम से प्रश्न पूछे गए हैं। प्रश्नों में आंतरिक विकल्प दिए गए हैं।
- खंड - ग में पाठ्यपुस्तक आरोह तथा वितान से प्रश्न पूछे गए हैं। प्रश्नों में आंतरिक विकल्प दिए गए हैं। तीनों खंडों के प्रश्नों के उत्तर देना अनिवार्य है।
- यथासंभव तीनों खंडों के प्रश्नों के उत्तर क्रमशः लिखिए।

खंड 'अ' (वस्तुपरक प्रश्न)

अपठित गद्यांश

1. निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर दिए गए प्रश्नों के उत्तर लिखिए - (1+1+1+1+2+2+2=10)

प्रकृति के साथ छेड़छाड़ विनाश का कारण बनता है। आधुनिकता के नाम पर जंगलों की कटाई, पहाड़ों को तोड़कर सड़क, होटल, मकान बनाना, कंक्रीट के बड़े-बड़े जंगल खड़े कर दिए जा रहे हैं। सुख की इस कभी न बुझने वाली प्यास के लिए इंसान प्रकृति से और छेड़खानी में लग जाता है। प्रकृति उसे बार-बार चेतावनी देती है, कभी भूकंप आ जाता है तो कभी बाढ़। प्रकृति को भूलना, आधुनिकता नहीं है। इसके अभाव को सहज रूप से महसूस न करने वाला मन बीमार होता है। आज जनसंख्या का एक बड़ा हिस्सा बीमार मन के लोगों का है। व्यक्ति जितना सृष्टि से दूर होता जा रहा है, शारीरिक, मानसिक और आत्मिक रूप से उतना ही अस्वस्थ हो रहा है। होना तो यह था कि प्रकृति की गोद में बैठकर अपनी आत्मा को टटोलते। स्वयं से इतना अधिक अपरिचय ही मनुष्य के पतन का सबसे बड़ा कारण बन रहा है। और यह अपरिचय क्यों है? क्योंकि मनुष्य लगातार प्रकृति से दूर होता जा रहा है।

आधुनिकता की अंधी दौड़ में शामिल व्यक्ति पृथ्वी की धूल यानी सृष्टि के मूल से अलग होता जाता है। ऐसा व्यक्ति निपट अकेला होता है। उसके आसपास जो लोग होते हैं, वस्तुएँ होती हैं, वे उसी नकली सुख को पोषित करती हैं, जिसमें सृष्टि के तत्व न के बराबर होते हैं। ऐसी आधुनिकता सृष्टि से अलगाव ला देती है। प्रकृति से इस प्रकार के अलगाव के कारण ही व्यक्ति पाप के ऐसे चक्कर में फँस जाता है। कृत्रिमता से आनंद का समझौता नहीं होता। अध्यात्म के सवाल के जवाब भी कृत्रिमता से नहीं मिलते। आत्मा भी इस नकली आनंद के बोझ से कहीं गहरे दब जाती है। आत्मा की सुनें या आनंद की ? आधुनिकता की दौड़ में पागलों की तरह भाग रहे लोग आनंद की सुनते हैं। आनंद चूँकि नकली है, इसलिए वह आगे बढ़ने के लिए तरह-तरह के पाखंड माँगता है। कुछ लोग भंडारा करके फोटो खिंचाते हैं और उसे अखबार में छपवाते हैं। क्या वो सच्चा आनंद है? कुछ आनंद के लिए पहाड़ों की ओर भागते हैं, और वहाँ घर से भी

ज्यादा अव्यवस्थित जीवन जीते हैं। कूड़ा-कचरा पहाड़ों में ही फेंककर चले आते हैं। जब वापस घर पहुँचते हैं तो पाते हैं कि मन तो अभी भी विचलित है। क्योंकि जिस प्रकृति की गोद में बैठकर हमें अध्यात्म का आनंद लेना था, उस गोद में हम कचरा डाल आए हैं। ऐसी आधुनिकता आनंद कभी नहीं देती है। वह सिर्फ दुख देती है, जिसे व्यक्ति सुख समझकर बैठा है।

- साभार नवभारत टाइम्स 8 अप्रैल, 2024

(i) आनंद को नकली कहा गया है- (1)

(क) पाखंड की माँग के कारण (ख) अध्यात्म से जुड़ने के कारण

(ग) कृत्रिमता से दूरी के कारण (घ) सृष्टि की समझ के कारण

(ii) निम्नलिखित विकल्पों में से कौन-सा मनुष्य के पतन का कारण नहीं है? (1)

(क) कृत्रिमता में आनंद का अनुभव करना (ख) अपनी प्रकृति से अपरिचित रहना

(ग) आधुनिक सुखों में लिप्त रहना (घ) आध्यात्मिक आनंद की अनुभूति करना

(iii) कथन और कारण को ध्यानपूर्वक पढ़कर नीचे दिए गए विकल्पों में से सर्वाधिक उपयुक्त विकल्प चुनकर लिखिए- (1)

कथन (A): आधुनिकता व्यक्ति को अकेला कर देती है।

कारण (R): इसमें सृष्टि तत्व का अभाव होता है।

(क) कथन (A) सही और कारण (R) गलत हैं।

(ख) कथन (A) गलत और कारण (R) सही है।

(ग) कथन (A) और कारण (R) दोनों सही हैं किंतु कारण (R) कथन (A) की सही व्याख्या नहीं करता है।

(घ) कथन (A) और कारण (R) दोनों सही हैं और कारण (R) कथन (A) की सही व्याख्या करता है।

(iv) प्रकृति किस प्रकार चेतावनी देती है? (1)

(v) आधुनिकता की अंधी दौड़ का प्रकृति पर क्या दुष्परिणाम पड़ा? स्पष्ट कीजिए। (2)

(vi) 'कृत्रिमता से आनंद का समझौता नहीं होता।' आशय स्पष्ट कीजिए। (2)

(vii) गद्यांश के आधार पर 'बीमार मन' पर टिप्पणी कीजिए। (2)

2. निम्नलिखित पद्यांश को ध्यानपूर्वक पढ़कर दिए गए प्रश्नों के उत्तर लिखिए :- (1+1+1+1+2+2=8)

हम नदी के द्वीप हैं।

हम नहीं कहते कि हमको छोड़कर स्रोतस्विनी बह जाय।

वह हमें आकार देती है।

हमारे कोण, गलियाँ, अंतरीप, उभार, सैकत-कूल

सब गोलाइयाँ उसकी गठी हैं।

माँ है वह! है, इसी से हम बने हैं।

किंतु हम हैं द्वीप। हम धारा नहीं हैं।

स्थिर समर्पण है हमारा।

हम सदा से द्वीप हैं स्रोतस्विनी के।

किंतु हम बहते नहीं हैं। क्योंकि बहना रेत होना है।

हम बहेंगे तो रहेंगे ही नहीं।

पैर उखड़ेंगे। प्लवन होगा। ढहेंगे। सहेंगे। बह जायेंगे।

और फिर हम चूर्ण होकर भी कभी क्या धार बन सकते?

रेत बनकर हम सलिल को तनिक गँदला ही करेंगे।

अनुपयोगी ही बनायेंगे।

द्वीप हैं हम!

यह नहीं है शाप। यह अपनी नियती है।

हम नदी के पुत्र हैं। बैठे नदी की क्रोड में।

वह बृहत भूखंड से हम को मिलाती है।

और वह भूखंड अपना पितर है।

नदी तुम बहती चलो।

(i) यहाँ 'रेत होने' का आशय है -

(1)

(क) समर्पित होना

(ख) अडिग बने रहना

(ग) विनम्र होना

(घ) अस्तित्व मिटना

(ii) द्वीप की पहचान है -

(1)

(क) प्रवाहशीलता

(ख) स्थिरता

(ग) जटिलता

(घ) गतिशीलता

(iii) प्रतीकों का सर्वाधिक उपयुक्त मिलान है -

(1)

(I) माँ - (अ) द्वीप

(II) पुत्र - (ब) भूखंड

(III) पिता - (स) नदी

(क) (I) - (ब), (II) - (स), (III) - (अ)

(ख) (I) - (स), (II) - (ब), (III) - (अ)

(ग) (I) - (स), (II) - (अ), (III) - (ब)

(घ) (I) - (अ), (II) - (ब), (III) - (स)

(iv) द्वीप होना अभिशाप क्यों नहीं है, स्पष्ट कीजिए।

(1)

(v) नदी किस प्रकार द्वीप को आकार देने में अपनी भूमिका अदा करती है, स्पष्ट कीजिए।

(2)

(vi) कवि नदी, द्वीप और भूखंड के प्रतीकों के माध्यम से क्या कहना चाहता है, आशय स्पष्ट कीजिए।

(2)

खंड-ख (अभिव्यक्ति और माध्यम)

3. निम्नलिखित तीन विषयों में से किसी एक विषय पर लगभग 120 शब्दों में रचनात्मक लेख लिखिए: -

(6X1=6)

(क) ऑनलाइन ठगी

(ख) मैं भारतीय हूँ

(ग) सोशल मीडिया हिंदी प्रचार का सशक्त माध्यम

4. निम्नलिखित में से किसी एक विषय पर लगभग 120 शब्दों में औपचारिक पत्र लिखिए-

(5X1=5)

आपको अस्वस्थता के कारण नज़दीकी अस्पताल में जाना पड़ा। वहाँ की खराब व्यवस्था से आपका मन आहत हो गया। इस संबंध में अधिकारियों का ध्यान आकर्षित करने के लिए प्रतिष्ठित समाचार पत्र के संपादक को पत्र लिखिए।

अथवा

आप जिस क्षेत्र में रहते हैं वहाँ के निवासी दैनिक जीवन में किसी न किसी समस्या से जूझ रहे होंगे। उस समस्या और उसके समाधान से अवगत करवाते हुए संबंधित विभाग के अधिकारी को पत्र लिखिए।

5. (i) निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़कर दिए गए प्रश्नों में से किन्हीं चार प्रश्नों के लगभग 40 शब्दों में उत्तर लिखिए -

(2X4=8)

(क) जनसंचार माध्यमों में द्वारपाल की भूमिका का उल्लेख कीजिए।

(ख) किसी भी समाचार पत्र में 'कार्टून कोने' का क्या महत्व है?

(ग) "डायरी एक ऐसा साक्षात्कार और संवाद है जिसमें हम सभी तरह की वर्जनाओं से मुक्त होते हैं।" स्पष्ट कीजिए।

(घ) सिद्ध कीजिए कि स्ववृत्त सूचनाओं का एक अनुशासित प्रवाह है।

(ङ) हिंदी शब्दकोश में शब्दों को खोजने की प्रक्रिया को संक्षेप में समझाइए।

(ii) निम्नलिखित प्रश्न का लगभग 60 शब्दों में उत्तर लिखिए -

(3X1=3)

(क) फ़िल्मी पटकथा में फ़्लैशबैक या फ़्लैश फ़ॉरवर्ड तकनीक का क्या महत्व है?

खंड-ग (आरोह भाग-1 और वितान भाग-1 पाठ्य पुस्तकों पर आधारित)

6. निम्नलिखित काव्यांश पर आधारित प्रश्नों को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के सर्वाधिक उपयुक्त विकल्प चुनकर लिखिए -

(1X5=5)

यहाँ दरख्तों के साये में धूप लगती है,
चलो यहाँ से चलें और उम्र भर के लिए।

न हो कमीज़ तो पाँवों से पेट ढँक लेंगे,
ये लोग कितने मुनासिब हैं इस सफ़र के लिए।

खुदा नहीं, न सही, आदमी का ख्वाब सही,
कोई हसीन नज़ारा तो है नज़र के लिए।

वे मुतमइन हैं कि पत्थर पिघल नहीं सकता,
में बेकरार हूँ आवाज़ में असर के लिए।

(i) "चलो यहाँ से चलें और उम्र भर के लिए" - पंक्ति में निहित भाव है -

- (क) विपरीत परिस्थितियों से पलायन करना
(ख) व्यवस्था को खारिज कर विद्रोह करना
(ग) भ्रष्टाचारी एवं अन्यायी व्यवस्था को नष्ट करना
(घ) अन्याय और नकारात्मकता के समक्ष झुक जाना

(ii) 'पत्थर पिघलने' से आशय है -

- (क) शासक वर्ग का भावुक होना (ख) शासक वर्ग का भाव-विभोर होना
(ग) व्यवस्था में परिवर्तन (घ) व्यवस्था का शिथिल होना

(iii) कॉलम 1 को कॉलम 2 से सुमेलित कीजिए और सही विकल्प चुनकर लिखिए :

कॉलम 1		कॉलम 2	
1	ये लोग कितने मुनासिब हैं इस सफ़र के लिए	(i)	विद्रोही कवि
2	में बेकरार हूँ आवाज़ में असर के लिए	(ii)	निरीह जनता
3	चलो यहाँ से चलें और उम्र भर के लिए	(iii)	असंतुष्ट सामान्य वर्ग

- (क) 1- (iii), 2- (ii), 3- (i) (ख) 1- (i), 2- (iii), 3- (ii)
(ग) 1- (ii), 2- (i), 3- (iii) (घ) 1- (iii), 2- (i), 3- (ii)

(iv) 'दरख्तों के साये में धूप' - के माध्यम से शायर संकेत कर रहा है-

- (क) रक्षक ही भक्षक होना (ख) असहनीय पीड़ा होना
(ग) भीषण गर्मी से व्याकुलता (घ) अभावों में आनंद की अनुभूति

(v) प्रस्तुत गज़ल में 'वे' प्रतीक हैं -

- (क) शासक वर्ग का (ख) शोषित वर्ग का
(ग) बुद्धिजीवी वर्ग का (घ) सामंती वर्ग का

7. निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़कर दिए गए तीन प्रश्नों में से किन्हीं दो प्रश्नों के लगभग 60 शब्दों में उत्तर दीजिए:- (3x2=6)

(क) कबीर सृष्टि के कण-कण में परमात्मा का वास मानते हैं। अपने मत के समर्थन में उन्होंने अपने पद में प्रकृति से अनेक उदाहरण दिए हैं। कबीर द्वारा वर्णित उदाहरणों को स्पष्ट करते हुए लिखिए कि आप उनके मत से कहाँ तक सहमत हैं?

(ख) 'आओ मिलकर बचाएँ' कविता में कवयित्री ने संथाली संस्कृति और परिवेश की किन सुखद अनुभूतियों का संरक्षण करके भावी संकट से बचाने का आग्रह किया है?

(ग) 'सबसे खतरनाक' कविता के अनुसार सपनों का मर जाना सबसे खतरनाक क्यों होता है? आपके जीवन में सपने क्या महत्त्व रखते हैं?

8. निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़कर दिए गए तीन प्रश्नों में से किन्हीं दो प्रश्नों के लगभग 40 शब्दों में उत्तर दीजिए:- (2X2=4)

(क) कवि पढ़ने-लिखने का क्या लाभ बताकर चंपा को पढ़ने के लिए प्रेरित करता है? इसका चंपा पर क्या प्रभाव पड़ता है?

(ख) 'घर की याद' कविता में कवि अपनी दुखानुभूति का आभास अपने माता-पिता को नहीं करवाना चाहता। यह सोचकर कवि उन्हें कैसा संदेश भेजना चाहता है?

(ग) अक्क महादेवी ने लक्ष्य-प्राप्ति में किसे बाधक माना है और क्यों?

9. निम्नलिखित गद्यांश पर आधारित प्रश्नों को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के सर्वाधिक उपयुक्त विकल्प चुनकर लिखिए - (1X5=5)

आप किस काम को आए थे और क्या कर चले। शासक-प्रजा के प्रति कुछ तो कर्तव्य होता है, यह बात आप निश्चित मानते होंगे। सो कृपा करके बतलाइए, क्या कर्तव्य आप इस देश की प्रजा के साथ पालन कर चले ! क्या आँख बंद करके मनमाने हुकम चलाना और किसी की कुछ न सुनने का नाम ही शासन है? क्या प्रजा की बात पर कभी कान न देना और उसको दबाकर उसकी मर्जी के विरुद्ध जिद्द से सब काम किए चले जाना ही शासन कहलाता है? एक काम तो ऐसा बतलाइए, जिसमें आपने जिद्द छोड़कर प्रजा की बात पर ध्यान दिया हो। 'कैसर' और ज़ार भी घेरने-घोटने से प्रजा की बात सुन लेते हैं पर आप एक मौका तो बताइए, जिसमें किसी अनुरोध या प्रार्थना सुनने के लिए प्रजा के लोगों को आपने अपने निकट फटकने दिया हो और उनकी बात सुनी हो। नादिरशाह ने जब दिल्ली में कत्लेआम किया तो आसिफज़ाह के तलवार गले में डालकर प्रार्थना करने पर उसने कत्लेआम उसी दम रोक दिया। पर आठ करोड़ प्रजा के गिड़गिड़ाकर विच्छेद न करने की प्रार्थना पर आपने ज़रा भी ध्यान नहीं दिया। इस समय आपकी शासन-अवधि पूरी हो गई है तथापि बंग-विच्छेद किए बिना घर जाना आपको पसंद नहीं है! नादिर से भी बढ़कर आपकी जिद्द है। क्या समझते हैं कि आपकी जिद्द से प्रजा के जी में दुख नहीं होता?

(i) 'कान न देना' किस तथ्य की ओर संकेत कर रहा है-

- | | |
|------------------------------------|-----------------------------------|
| (क) विद्रोह के प्रति सचेत न रहना | (ख) प्रजा की माँग की उपेक्षा करना |
| (ग) शासकीय आदेश पर ध्यान नहीं देना | (घ) विदेशी सत्ता की अवहेलना करना |

(ii) प्रस्तुत गद्यांश के अनुसार 'आठ करोड़ प्रजा' है-

- | | |
|----------------|------------------|
| (क) भारत की | (ख) पाकिस्तान की |
| (ग) ब्रिटेन की | (घ) बंगाल की |

(iii) निम्नलिखित कथनों पर विचार कीजिए -

- I. 'कैसर' शब्द तानाशाह जर्मन शासकों के लिए प्रयुक्त होता था।
- II. नादिरशाह की प्रार्थना पर आसिफज़ाह ने कत्लेआम रोक दिया।
- III. 'ज़ार' शब्द जूलियस सीज़र से बना है।

IV लॉर्ड कर्जन केवल चाटुकारों की ही बात सुनते थे।

गद्यांश के अनुसार कौन-सा/से कथन सही है/हैं -

(क) कथन I और III सही हैं

(ख) कथन II और IV सही हैं

(ग) केवल कथन I सही है

(घ) केवल कथन II सही है

(iv) प्रस्तुत गद्यांश में मुख्यतः किस त्रासदी का उल्लेख है-

(क) लॉर्ड माउंटबेटन द्वारा भारत-पाक विभाजन

(ख) कैसर और ज़ार द्वारा घेरना-घोटना

(ग) लॉर्ड कर्जन द्वारा बंगाल विभाजन

(घ) नादिरशाह द्वारा दिल्ली में कत्लेआम

(v) कथन और कारण को ध्यानपूर्वक पढ़कर नीचे दिए गए विकल्पों में से सर्वाधिक उपयुक्त विकल्प चुनकर लिखिए-

कथन (A): लॉर्ड कर्जन कैसर और ज़ार से अधिक तानाशाह थे।

कारण (R): लॉर्ड कर्जन घेरने-घोटने से प्रजा की बात सुन लेते थे।

(क) कथन (A) सही और कारण (R) गलत है।

(ख) कथन (A) गलत और कारण (R) सही है।

(ग) कथन (A) और कारण (R) दोनों सही हैं किंतु कारण (R) कथन (A) की सही व्याख्या नहीं करता है।

(घ) कथन (A) और कारण (R) दोनों सही हैं और कारण (R) कथन (A) की सही व्याख्या करता है।

10. निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़कर दिए गए तीन प्रश्नों में से किन्हीं दो प्रश्नों के लगभग 60 शब्दों में उत्तर दीजिए:- (3X2=6)

(क) मियाँ नसीरुद्दीन करके सीखने को सबसे बड़ा हुनर मानते थे। क्या आपके अनुसार भी अभ्यास से महारथ हासिल की जा सकती है? अपने विचारों को तर्कसहित स्पष्ट कीजिए।

(ख) उम्र के एक पड़ाव पर मोहन और धनराम का सहज मिलन छात्र जीवन की विशिष्टता को दर्शाता है। इस विषय को ध्यान में रखते हुए अपने किसी विशेष मित्र के विषय में लिखिए।

(ग) "गलती करने वाला तो है ही गुनहगार, पर उसे बर्दाश्त करने वाला भी कम गुनहगार नहीं होता।" रजनी पाठ के इस संवाद के संदर्भ में अध्यापक और छात्र के मध्य संबंधों को लिखिए।

11. निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़कर दिए गए तीन प्रश्नों में से किन्हीं दो प्रश्नों के लगभग 40 शब्दों में उत्तर दीजिए:- (2X2=4)

(क) "उसके जीवन की फाइल भी पूर्ण हो चुकी थी।" - 'जामुन का पेड़' पाठ के आधार पर पंक्ति में निहित व्यंग्य को स्पष्ट कीजिए।

(ख) नेहरू जी ने 'भारत माता की जय' नारे को अत्यंत व्यापक अर्थों में लिया है। क्या वर्तमान समय में इस प्रकार के नारों की प्रासंगिकता है?

(ग) फ़िल्म-निर्माण किसी तपस्या से कम नहीं है- सिद्ध कीजिए।

12. निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़कर दिए गए तीन प्रश्नों में से किन्हीं दो प्रश्नों के लगभग 100 शब्दों में उत्तर दीजिए:- (5X2=10)

(क) 'आलो आँधारि' पाठ में बेबी हालदार एक गरीब नौकरानी होने के साथ-साथ पति से अलग रहने वाली महिला भी थी। इन परिस्थितियों ने बेबी के जीवन को किस प्रकार प्रभावित किया? सामान्य नौकरानी से लेखिका बनने में इन परिस्थितियों ने क्या भूमिका निभाई? अपने विचार लिखिए।

(ख) अकसर यह आरोप लगाए जाते हैं कि चित्रपट संगीत ने लोगों के कान बिगाड़ दिए। लेकिन कुमार गंधर्व के अनुसार चित्रपट संगीत ने लोगों की संगीत-अभिरुचि को संस्कारित किया है। आप इस कथन से कहाँ तक सहमत हैं? तर्क सहित उत्तर लिखिए।

(ग) "प्राकृतिक संसाधनों का सदुपयोग आपदा को अवसर में बदलने की क्षमता रखता है" - कथन के संदर्भ में पाठ 'राजस्थान की रजत बूँदें' किस गंभीर समस्या के विषय में चिंतन करने के लिए विवश करता है? इस समस्या का समाधान प्राकृतिक संसाधनों द्वारा किस प्रकार किया जा सकता है?

अंक योजना - प्रतिदर्श प्रश्नपत्र 2024-25

विषय हिंदी (आधार)

(विषय कोड - 302)

कक्षा- ग्यारहवीं

निर्धारित समय: 03 घंटे

अधिकतम अंक : 80

सामान्य निर्देश : यदि परीक्षार्थी ने ऐसा कोई सही उत्तर लिखा हो जो इस उत्तर संकेत में न हो तो उसके भी यथासंभव अंक दिए जाएँ।

प्रश्न संख्या	अपेक्षित मूल्यांकन बिंदु	निर्धारित अंक	कुल अंक
1.	<p>खंड 'अ' अपठित गद्यांश</p> <p>(i) (क) पाखंड की माँग के कारण</p> <p>(ii) (घ) आध्यात्मिक आनंद की अनुभूति करना</p> <p>(iii) (घ) कथन (A) और कारण (R) दोनों सही हैं और कारण (R) कथन (A) की सही व्याख्या करता है।</p> <p>(iv) भूकंप और बाढ़ जैसी प्राकृतिक आपदाओं के माध्यम से</p> <p>(v)</p> <ul style="list-style-type: none"> • वनों की कटाई, पर्वतों को तोड़कर सड़क एवं होटल निर्माण • कंक्रीट के जंगल खड़े करना • प्राकृतिक आपदाओं का निरंतर बढ़ते जाना • मनुष्य के स्वास्थ्य पर प्रतिकूल प्रभाव • विचलित मन आदि। <p>(समग्र के आधार पर कोई दो बिंदु अपेक्षित)</p> <p>(vi)</p> <ul style="list-style-type: none"> • आधुनिकता और बनावटीपन से मानसिक व आत्मिक अस्वस्थता • अध्यात्म के सवाल का जवाब कृत्रिमता • आत्मा भी इस नकली आनंद के बोझ तले दब जाती है। • सृष्टि के मूल से दूर होना दुख का कारण। <p>(समग्र के आधार पर कोई दो बिंदु अपेक्षित)</p> <p>(vii)</p> <ul style="list-style-type: none"> • प्रकृति से पृथक होना बीमारी को बुलावा • प्रकृति के सानिध्य में ही आत्मिक सुख संभव 	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p>	10

<p>2.</p>	<ul style="list-style-type: none"> • जितना दूर जाएँगे उतना अस्वस्थ होंगे • प्रकृति से दूरी के कारण मनुष्य का पतन • प्रकृति से दूरी शारीरिक, मानसिक और आत्मिक अस्वस्थता का कारण (समग्र के आधार पर कोई दो बिंदु अपेक्षित) <p>(i) (घ) अस्तित्व मिटना</p> <p>(ii) (ख) स्थिरता</p> <p>(iii) (ग) (I) - (स) , (II) - (अ) , (III) - (ब)</p> <p>(iv) द्वीप बनना शाप या आकस्मिक घटना नहीं है बल्कि यह उस नियति का परिणाम है, जो उसके भाग्य में पहले से निर्धारित है।</p> <p>(v)</p> <ul style="list-style-type: none"> • जिस प्रकार एक माँ संस्कार देकर अपने शिशु के व्यक्तित्व का निर्माण करती है। उसी प्रकार नदी द्वीप के स्वरूप को तैयार करती है। • नदी अपने साथ लाई मिट्टी और रेत के कणों से धीरे-धीरे इसके रूप और आकार को निर्मित करती है। • माँ की गोद में बैठे शिशु की भांति द्वीप भी संरक्षण में आकार व पहचान पाता है। <p>(vi)</p> <ul style="list-style-type: none"> • जिस प्रकार नदी द्वीप का निर्माण करती है और उसे विस्तृत भूखंड से जोड़ती है, उसी प्रकार संस्कृति व्यक्तित्व का निर्माण करती है और उसे समाज से जोड़ती है। • नदी रूपी माँ, द्वीप रूपी शिशु को संस्कार देते हुए समाज रूपी पिता से संबंध स्थापित कराती है। • व्यक्ति की स्थिति समाज में एक द्वीप की भांति है। • व्यष्टि चेतना को सुरक्षित रखते हुए भी वह उस समष्टि का अंग है। • नदी समष्टि चेतना का प्रतीक है जबकि 'द्वीप' व्यष्टि चेतना का। (समग्र के आधार पर कोई दो बिंदु अपेक्षित) <p style="text-align: center;">खंड-'ख' (अभिव्यक्ति और माध्यम)</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p>	<p>8</p>
<p>3.</p>	<p>विषयवस्तु</p> <p>प्रस्तुति</p> <p>भाषा</p>	<p>3</p> <p>2</p> <p>1</p>	<p>6</p>

4.	<p>विषयवस्तु प्रारूप भाषा</p>	3 1 1	5
5.(i)	<p>(क) किसी भी समाचार पत्र में संपादक और उसके सहायक संपादकों को द्वारपाल की संज्ञा दी गई है। द्वारपाल की भूमिका -</p> <ul style="list-style-type: none"> • सार्वजनिक हितों का ध्यान रखना। • पत्रकारिता के सिद्धांतों और मूल्यों को ध्यान में रखते हुए कार्य करना। • पत्रकारिता की आचार-संहिता के अनुसार सामग्री का संपादन करना। • संपूर्ण विषय-वस्तु की जाँच के उपरांत प्रकाशन की अनुमति देना। <p>(ख)</p> <ul style="list-style-type: none"> • लगभग प्रत्येक समाचार पत्र में कार्टून कोना निर्धारित होता है। महत्व - • इसके माध्यम से की गई सटीक टिप्पणियाँ पाठक को प्रभावित करती हैं। • समाज की विद्रूपताओं या समस्याओं को उद्घाटित करने का माध्यम। • संदेश को प्रभावी एवं धारदार अंदाज़ में पहुँचाने का माध्यम। <p>(ग)</p> <p>डायरी अपना ही अंतरंग साक्षात्कार है।</p> <ul style="list-style-type: none"> • इसमें स्वयं से ही संवाद स्थापित होता है। • स्वयं को समझने का सबसे सशक्त माध्यम • जीवन के कुछ विशिष्ट क्षणों, विचारों एवं स्मृतियों की अभिव्यक्ति • मन के समस्त सुखद-दुखद या अच्छे-बुरे भावों से निवृत्ति। • डायरी अंतर्मन की समस्त वर्जनाओं से मुक्ति का साधन। (समग्र के आधार पर कोई दो बिंदु अपेक्षित) <p>(घ)</p> <ul style="list-style-type: none"> • स्ववृत्त में सूचनाओं को क्रमबद्ध रूप में लिखने की आवश्यकता। • सूचनाओं को लिखते समय प्रवाहमयता का गुण भी विद्यमान होना चाहिए। • सूचनाओं का क्रम व्यक्ति परिचय, शैक्षणिक योग्यता, अनुभव, प्रशिक्षण, उपलब्धियाँ एवं कार्योत्तर गतिविधियों के रूप में होना चाहिए। <p>(ङ)</p> <ul style="list-style-type: none"> • शब्दकोश में शब्दों का क्रम स्वर से प्रारंभ होकर व्यंजन पर समाप्त होता है। • हिंदी शब्दकोश में 'अं' स्वर से शब्दों का प्रारंभ होता है। 	2 2 2 2	8

<p>5.(ii)</p>	<ul style="list-style-type: none"> • 'क' वर्ण से बने शब्द खोजने के लिए क्रम होगा - कं, कँ, क, का, की, कि.....क् • संयुक्ताक्षर क्ष, त्र, ज्ञ, श्र वर्णों के अंत्याक्षर के साथ आते हैं। <p>फ़्लैशबैक : इस तकनीक के माध्यम से अतीत में घटी घटनाओं को दिखाना संभव।</p> <p>फ़्लैश फ़ॉरवर्ड :</p> <ul style="list-style-type: none"> • इसके माध्यम से भविष्य में होने वाले किसी हादसे या घटना को दिखा सकते हैं। • दोनों ही तकनीकों के माध्यम से वर्तमान और भविष्य की तुलना करना ज्यादा सरल होता है। <p>खंड-'ग' (आरोह भाग-1 और वितान भाग-1 पुस्तकों पर आधारित)</p>	<p>3</p>	<p>3</p>
<p>6.</p>	<p>(i) (क) विपरीत परिस्थितियों से पलायन करना (ii) (ग) व्यवस्था में परिवर्तन (iii) (ग) 1- (ii), 2- (i), 3- (iii) (iv) (क) रक्षक ही भक्षक होना (v) (ख) शोषित वर्ग का</p>	<p>1 1 1 1 1</p>	<p>5</p>
<p>7.</p>	<p>(क)</p> <ul style="list-style-type: none"> • संसार में पवन, पानी, ज्योति/अग्नि इत्यादि प्राकृतिक तत्वों का एक ही होना • ईश्वर द्वारा सभी मनुष्यों को एक ही प्रकार के पंच तत्वों से निर्मित करना • ईश्वर द्वारा निर्मित प्रत्येक प्राणी में एक ही प्राण-तत्व और आत्मा का निवास होना • (सहमति/असहमति में विद्यार्थी के अपने विचार स्वीकार्य) <p>(ख)</p> <ul style="list-style-type: none"> • संचाली परगना की मिट्टी का स्वाभाविक रंग, प्राकृतिक परिवेश • भाषा में झारखंडीपन, जीवन का उत्साह • स्वभाव का अक्खड़पन, जुझारू प्रवृत्ति • दिल का भोलापन, परंपरागत जीवन-शैली और अस्त्र-शस्त्र • लोक गीतों की मधुरता, उन्मुक्त हँसी और शांत वातावरण <p>(ग)</p> <ul style="list-style-type: none"> • सपनों के मर जाने से नई इच्छाओं, कामनाओं, उत्साह का समाप्त हो जाना। • मनुष्य का निष्क्रिय एवं प्रतिक्रियाशून्य हो जाना । • जीवन में प्रगति की अभिलाषा न रहना । 	<p>3 3</p>	<p>6</p>

	<ul style="list-style-type: none"> • आगे बढ़ने के लिए सपने देखना और उन्हें पूरा करने का प्रयास करना आवश्यक । (विद्यार्थी द्वारा दिए गए अन्य विचार भी स्वीकार्य) 		
8.	<p>(क)</p> <ul style="list-style-type: none"> • कवि के अनुसार चंपा पढ़ लिखकर अपने पति को संदेश भेज पाएगी। • पति द्वारा भेजे गए पत्र पढ़ पाएगी। • पढ़ना-लिखना अच्छा होता है। • चंपा कवि की बात का विरोध करती है, कवि को झूठा बताती है । • चंपा कहती है -विवाह नहीं करेगी अथवा पति को दूर नहीं जाने देगी। • पत्र पढ़ने-लिखने की आवश्यकता नहीं। 	2	4
	<p>(ख)</p> <ul style="list-style-type: none"> • कवि कारागार में अपनी वास्तविक स्थिति के विषय में बताकर माता-पिता के पुत्र-वियोग के कष्ट को बढ़ाना नहीं चाहता। • उन्हें सांत्वना देने और निश्चिंत रखने के प्रयास में कवि अपनी व्यथा को छिपाकर अपने स्वस्थ होने, पढ़ते-लिखते रहने, गौरवशाली कामों और व्यवहार द्वारा पिता के दिखाए मार्ग पर चलने और देश के प्रति अपने कर्तव्य का खुशी-खुशी निर्वाह करने का संदेश अपने परिवार को भेजता है। 	2	
	<p>(ग)</p> <ul style="list-style-type: none"> • भ्रूख, प्यास, नींद, क्रोध, मद, मोह, ईर्ष्या आदि मनोभाव लक्ष्य-प्राप्ति में बाधाएँ हैं। • इंद्रियाँ ईश्वर-प्राप्ति के मार्ग में बाधक • सांसारिक सुखों में उलझाकर लक्ष्य से विमुख करती हैं। 	2	
9.	<p>(i) (ख) प्रजा की माँग की उपेक्षा करना</p> <p>(ii) (घ) बंगाल की</p> <p>(iii) (क) कथन । और ।।। सही हैं</p> <p>(iv) (ग) लॉर्ड कर्जन द्वारा बंगाल विभाजन</p> <p>(v) (क) कथन (A) सही और कारण (R) गलत है।</p>	1 1 1 1 1	5
10.	<p>क)</p> <ul style="list-style-type: none"> • मियाँ नसीरुद्दीन के अनुसार कठोर परिश्रम व निरंतर अभ्यास के द्वारा किसी भी विषय में महारत हासिल की जा सकती है। ▪ जीवन में अभ्यास और परिश्रम का महत्व 	3	6

11.	<p>▪ तत्पश्चात् विद्यार्थी तर्क सहित अपने विचारों को रखते हुए प्रस्तुत कथन को पुष्ट करेंगे ।</p> <p>(ख)</p> <ul style="list-style-type: none"> • छात्र जीवन में मित्रता अनमोल उपहार है। • जीवन में मधुरता बनाए रखने के लिए एक मित्र का होना अत्यंत आवश्यक है। • विद्यार्थी मित्र का उदाहरण देते हुए अपने विचार रखेंगे। • मोहन और धनराम के संबंधों पर भी प्रकाश डालते हुए विषय की पुष्टि करेंगे। <p>(ग)</p> <ul style="list-style-type: none"> ▪ शिक्षा व्यवस्था के विसंगतिकरण में अन्याय करने वाले के साथ अन्याय सहने वाले भी दोषी। ▪ ट्यूशन व्यवस्था में अध्यापकों के साथ-साथ छात्र तथा उनके अभिभावक (नंबरों के पीछे भागने वाले) भी सम्मिलित हैं । ▪ यदि अध्यापक विद्यार्थियों को ट्यूशन के लिए विवश करते हैं तो यह अनुचित है। <p>(क)</p> <ul style="list-style-type: none"> ▪ सरकारी बाबू और अधिकारियों की संवेदना शून्य कार्यशैली पर तीखा कटाक्ष। ▪ कवि को पेड़ के नीचे से निकालने की प्रक्रिया में जब कागज़ी कार्यवाही (फाइल) पूर्ण हुई तब तक कवि की जीवन-लीला भी पूर्ण हो गई । <p>(ख)</p> <ul style="list-style-type: none"> ▪ नेहरू जी के अनुसार 'भारत माता की जय' का तात्पर्य भारत के सभी निवासियों की जय तथा उनके मंगल से था। ▪ छोटे-छोटे एवं प्रभावी नारे किसी भी व्यक्ति के जीवन को बदलने में सक्षम। ▪ वर्तमान समय में ऐसे नारे देश-भक्ति और बंधुत्व की भावना उत्पन्न कर सकते हैं। <p style="text-align: center;">(उदाहरण द्वारा स्पष्ट किया जा सकता है।)</p> <p>(ग)</p> <ul style="list-style-type: none"> ▪ फिल्म निर्माण के समय आने वाली समस्याओं के बारे में बताते हुए निर्माता निर्देशक सत्यजीत राय की कार्य-शैली से अवगत करवाना। ▪ अप्पू के साथ ढाई साल पाठ में वर्णित फिल्म निर्माण के समय आने वाली समस्याओं का वर्णन <p style="text-align: center;">(किन्हीं दो समस्याओं का उल्लेख)</p>	3	3
		2	4
		2	
		2	

12.	<p>(क)</p> <ul style="list-style-type: none"> ▪ बेबी द्वारा बच्चों का पालन-पोषण करने के लिए लोगों के घरों में काम करना ▪ आर्थिक कठिनाइयों से अकेले जूझना ▪ अकेले रहने के कारण समाज के ताने सुनना और दुर्व्यवहार का सामना करना ▪ विपरीत परिस्थितियों ने बेबी को संघर्ष करने की क्षमता दी ▪ जीवन-निर्वाह के लिए दिनभर परिश्रम करने के बाद तातुश के प्रोत्साहन से अपनी पढ़ने-लिखने की इच्छा को पूरा किया। ▪ तातुश की प्रेरणा से ही अपने जीवन-संघर्ष को कलमबद्ध करने का निश्चय किया। ▪ बेबी ने परिस्थितियों से हार न मानकर उन्हीं परिस्थितियों को अपनी पहचान बनाने का माध्यम बनाया। <p>(ख)</p> <ul style="list-style-type: none"> ▪ कुमार गंधर्व इस आरोप को नकारते हैं। ▪ वे मानते हैं कि चित्रपट संगीत ने लोगों के कान सुधारे हैं। ▪ इसके कारण लोगों को सुरीलेपन की समझ हो रही है। ▪ चित्रपट संगीत के माध्यम से उन्हें तरह-तरह की लय सुनने को मिल रही है। ▪ आम आदमी को लय की सूक्ष्मता की समझ आ रही है। ▪ आम आदमी में संगीत विषयक अभिरुचि को पैदा किया है। ▪ लोगों द्वारा शास्त्रीय संगीत को देखने और समझने में परिवर्तित दृष्टिकोण का श्रेय लेखक ने लता के चित्रपट संगीत को दिया है। <p>(सहमति अथवा असहमति में विद्यार्थियों के तर्कसंगत विचार स्वीकार्य)</p> <p>(ग)</p> <ul style="list-style-type: none"> ▪ मरुस्थल में जल की कमी ▪ जल संरक्षण की समस्या ▪ उन क्षेत्रों में जल की बर्बादी जहाँ जल सुलभता से उपलब्ध। ▪ लोगों द्वारा कुई बनाकर धरती के नीचे संरक्षित जल को उपयोग में लाने के प्रयास। ▪ वर्षा जल और अन्य प्राकृतिक संसाधनों का संरक्षण करने एवं भविष्य के लिए बचाकर रखा जाए। ▪ तकनीक का प्रयोग प्रकृति को नष्ट करने की अपेक्षा प्रकृति की रक्षा हेतु किया जाए। 	5	10
		5	
		5	

Class: XI
PHYSICAL EDUCATION

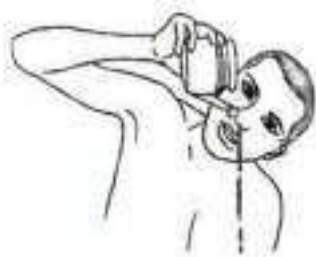
Time: 03 Hours **SAMPLE PAPER- 2025** Maximum Marks: 70

General instructions:

- The questions paper consists of 5 sections and 37 questions.
- Section A consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- Section B consists of questions 19-24 carrying 2 marks each and are very short answer types and should not exceed 60-90 words. Attempt any 5.
- Section C consists of questions 25-30 carrying 3 marks each and are short answer types and should not exceed 100-150 words. Attempt any 5.
- Section D consists of questions 31-33 carrying 4 marks each and are case studies. There are internal choices available.
- Section E consists of questions 34-37 carrying 5 marks each and are long answer types and should not exceed 200-300 words. Attempt any 3.

Section A

- 1) In 1948, the Central Government Physical Education Committees were established, also referred to as:
 - a) Tara Chand Committee
 - b) Simon Committee
 - c) RajkumariAmritkaur Committee
 - d) NSNIS Committee
- 2) How many times have the Olympics been postponed since their resuscitation as modern events?
 - a) Once -1916
 - b) Twice-1940, 1944
 - c) Thrice- 1916, 1940 & 1944
 - d) Never postponed
- 3) “It encourages us to consider sport as a tool for mutual understanding among individuals and people from all over the world” is an example of which of the following Olympic values?
 - a) Friendship
 - b) Respect
 - c) excellence
 - d) Fair play
- 4) Identify the image



- a) Dand Dhoti
 - b) Sutra Neti
 - c) JalaNeti
 - d) Vaman Dhoti
- 5) What does the element of Dharna in ashtanga yoga refer to?
 - a) Breathing control
 - b) complete stability of the mind
 - c) control of the senses
 - d) union with the supreme soul
- 6) Which medical professional can help children with a number of oral disorders such as trouble swallowing, motor skills, speech issues, cognitive-linguistic conditions and language?
 - a) Physiotherapist
 - b) occupational therapist
 - c) speech therapist
 - d) special education counselor

- 7) A disability present at the time of birth is also known as
 a) Invisible disability c) congenital disability
 b) Locomotor disability d) temporary disability
- 8) In order to prevent external blood loss, it is best to:
 a) Apply direct pressure over the wound.
 b) Take the patient to hospital
 c) Wash the wound with water.
 d) Apply cream on the wound
- 9) What is the ability to perform cardio vascular exercises like running, aerobics exercises or swimming for an extended period of time called?
 a) Speed b) Strength c) Endurance d) Flexibility
- 10) A skinfold measurement devices used on the body is called as”
 a) Caliper c) sphygmomanometer
 b) Waist measuring tape d) none of the above.
- 11) Rohan is a 15 year old athlete, his waist circumference is 80 cm and hip circumference is 100 cm. What is the waist-hip ratio of Rohan?
 a) 0.8 b) 0.9 c) 1.0 d) 1.25
- 12) Match List – I with List – II and select the correct answer from the code given below:

List – I		List - II	
(i)	Bone	1	Connects muscle to bone
(ii)	Cartilage	2	Connects bones to each other
(iii)	Ligament	3	Provide cushioning and prevent friction
(iv)	Tendon	4	Framework to body

CODES				
	i	ii	iii	iv
a)	2	3	1	4
b)	4	3	2	1
c)	2	3	4	1
d)	4	2	1	3

- 13) Which of the following is known as windpipe?
 a) Pharynx b) Larynx c) Trachea d) Oropharynx
- 14) Given below are the two statements labeled Assertion (A) and Reason (R):
Assertion (A): Understanding by mechanical principles helps athletes improve technique and prevent injuries.
Reason (R): Biomechanics is crucial in analyzing human movement patterns and optimizing sports performance.
 a) Both (A) and (R) are true and (R) is the correct explanation of (A).
 b) Both (A) and (R) are true but (R) is not the correct explanation of (A).
 c) Both (A) and (R) are false.
 d) (A) is false but (R) is true.
- 15) It is An imaginary horizontal surface which divides the body into upper and lower part is known as:
 a) Digital Plane b) Frontal Plane c) Transverse Plane d) Vertical Plane
- 16) Psychological attribute That refers to the ability to maintain focus motivation and positive thinking in the face of pressure adversity and uncertainty

- a) Resilience b) Mental Toughness c) Team Cohesion d) Attention
- 17) The process of the body getting accustomed to a particular training program is known as:
a) Recovery b) Training Load c) Adaptation d) Overload
- 18) Which of the following is NOT a side effect associated with anabolic steroid use in sports?
a) A) Liver damage c) Increased risk of heart disease
b) Enhanced recovery time d) Mood swings

Section B

(Attempt any five questions)

- 19) Write the purpose of RFID chips?
20) Write a brief explanation of the "pursuit of excellence".
21) Why is it important to focus on the child, not the disability, in social interactions?
22) Describe how physical activity can influence one's ability to lead effectively.
23) How is body mass index calculated, and what does it indicate about an individual's health?
24) How are smooth muscle muscles different from cardiac muscle?

Section C

(Attempt any five questions)

- 25) How have the modern Olympics influenced the development of sports and physical education globally? Provide examples to support your answer."
26) How important is understanding of joint structure to avoid sports injuries?
27) Differentiate between kinetic and kinematic analysis in the context of sports performance. Give examples to illustrate each type of analysis.
28) Compare and contrast the movements occurring around the three cardinal axes in terms of their biomechanical implications for sports performance.
29) Describe the key developmental milestones and characteristics observed during infancy. How do these milestones contribute to the overall physical, cognitive, and socio-emotional development of infants?
30) How can coaches help athletes develop their skills in sports? Give one example of how a coach might provide feedback to improve technique.

Section D

(Internal Choices Available)

- 31) XYZ has a diverse student population, including 20 students with different disabilities. Recognizing the importance of physical activity for all, the school has implemented and adapted (APE) physical education program. This program is designed to ensure that every student, regardless of their abilities, has the opportunity to participate in activities that promote health and social interactions. The program is guided by training professionals who specialize in adaptive physical education.

From the case study, answer the following questions

- a) _____ is the professional who helps improve speech and communication skills.
b) Name the professional responsible for designing an individualized educational plan at the school.
c) _____ is the type of disability that affects cognitive functions.
d) Write any one disability etiquette.

Or

The APE program is guided by professionals who specialize in _____ physical education.

32) Ombeer Singh is 50 years old recreational athlete who always maintain a high level of fitness Recently, he decided to undergo a comprehensive health related fitness assessment to ensure he remains in optimal health and to identify any areas for improvement. Ombeer Singh completed a Vo2 Max test on the treadmill. His one repetition maximum (1 RM) for the bench press was 80 kg. He completes 40 push-ups in 1 minute and undergoes flexibility and body composition test.

- a) _____ type of test did Ombeer Singh undergo to measure his cardiovascular fitness?
- b) _____ is the test to measure lower body flexibility.
- c) One repetition maximum (1 RM) is a test to measure _____ health related fitness components.
- d) His ability to perform 40 push-ups in one minute is an indicator of _____ health related fitness components.

Or

Ombeer Singh's one repetition maximum (1 RM) for the bench press is _____ kg.

33) Vivek is a 25 year old professional marathon runner who has been training intensively for the upcoming City marathon.. His coach Mr Chauhan designs a personalize training program for him. During the fifth week started feeling excessively fatigued and notice a drop in performance despite this he pushed through training session by the end of 6 week he experience Muscle soreness, irritability and disturb sleep. Coach noticed these signs and decided to adjust his training program. Mr Chauhan focused on Active recovery, better diet and ensure adequate rest.

From the case study, answer the following questions

- a) _____ is the primary cause of Vivek excessive fatigue during 5th week .
- b) Mr. Chauhan, Vivek's coach, noticed signs of _____ in Vivek, prompting him to adjust the training program.
- c) Despite feeling fatigued, Vivek pushed through his training sessions, leading to _____ by the end of the 6th week.
- d) _____ is the main purpose of recovery.

Section E

(Attempt any three questions)

- 34) "In the realm of physical education, the Government of India has implemented several schemes and committees post-independence aimed at promoting sports and fitness. Explain any five of them."
- 35) State the physiological and psychological benefits of practicing yogic kriyas (shat karma). How do these cleansing techniques contribute to holistic health and well-being? Provide examples of specific shat karmas and their therapeutic applications in modern lifestyles."
- 36) "Discuss the concept of wellness and its dimensions. Explain how each dimension contributes to achieving holistic well-being. Provide examples to illustrate the practical application of wellness strategies in everyday life."
- 37) Evaluate the impact of peer pressure on adolescent substance abuse and strategies for prevention and management.

MARKING SCHEME
Physical Education
Class XI (2024-25)

Note: Any other relevant answer, not given here but given by the candidates, should be awarded accordingly.

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
1	A) TARACHAND COMMITTEE	1	1
2	C) Thrice- 1916, 1940 & 1944	1	1
3	A) Friendship	1	1
4	C) Jala neti	1	1
5	b) complete stability of the mind	1	1
6	b) occupational therapist	1	1
7	c) congenital disability	1	1
8	a) Applied direct pressure over the wound	1	1
9	c) Endurance	1	1
10	a) calliper	1	1
11	a) 0.8	1	1
12	b) 4-3-2-1	1	1
13	c) Trachea	1	1
14	a) Both (A) and (R) are true and (R) is the correct explanation of (A).	1	1
15	c) Transverse plane	1	1
16	b) Mental Toughness	1	1
17	c) Adaptation	1	1
18	b) enhance recovery time	1	1
19	The purpose of RFID chips is to enable wireless identification and tracking of objects or individuals using radio waves.	2	2
20	The pursuit of excellence involves striving for the highest standards of achievement or performance in a particular endeavor, driven by a relentless dedication to continuous improvement and mastery. It encompasses setting ambitious goals, maintaining disciplined effort, learning from setbacks, and consistently pushing boundaries to reach one's full potential.	2	2
21	It is important to focus on the child, not the disability, in social interactions because doing so promotes inclusivity, respect, and dignity. By emphasizing the child's abilities, strengths, and unique personality rather than defining them by their disability, we foster a positive environment that encourages self-esteem, social integration, and equal opportunities for participation in activities and relationships. This approach helps build empathy, reduces stigma, and supports the child in developing a positive self-image and fulfilling their potential in all aspects of life.	2	2
22	Physical activity plays a crucial role in enhancing one's ability	2	2

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	<p>to lead effectively through various physiological, psychological, and behavioral mechanisms:</p> <ul style="list-style-type: none"> ● Physical Health and Energy Levels: ● Stress Reduction and Mental Clarity: ● Team Building and Communication: ● Role Modeling and Inspiration: 		
23	<p>Body Mass Index (BMI) is calculated using the following formula:</p> <p>BMI= weight (kg) divided by height (m)²</p> <p>BMI is a numeric value derived from an individual's weight and height. It provides a rough estimate of body fat and helps categorize individuals into different weight categories:</p> <ul style="list-style-type: none"> ● Underweight: BMI less than 18.5 ● Normal weight: BMI between 18.5 and 24.9 ● Overweight: BMI between 25 and 29.9 ● Obese: BMI 30 or higher 	1+1	2
24	<p>Smooth muscle and cardiac muscle are two distinct types of muscle tissues found in the human body, each with unique structural and functional characteristics:</p> <ul style="list-style-type: none"> ● Structure: Smooth muscle is non-striated and spindle-shaped, while cardiac muscle is striated and branched. ● Location: Smooth muscle is found in hollow organs and vessels, while cardiac muscle is exclusive to the heart. ● Control: Smooth muscle is primarily controlled involuntarily by the autonomic nervous system, while cardiac muscle is both involuntarily controlled by the autonomic nervous system and intrinsically regulated by its own pacemaker. 	2	2
25	<p>The Modern Olympics, since their inception in 1896, have profoundly influenced the development of sports and physical education on a global scale in several significant ways:</p> <ol style="list-style-type: none"> 1. International Participation and Unity: 2. Sporting Excellence and Innovation: 3. Promotion of Physical Education: 4. Inspiration and Role Models: 	1 x 3	3
26	<p>Understanding joint structure is crucial for athletes and sports enthusiasts to effectively prevent sports injuries for several reasons:</p> <ol style="list-style-type: none"> 1. Biomechanical Functionality: 2. Identifying Vulnerabilities: 3. Proper Technique and Form: 	1x 3	3

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS																					
	<p>4. Injury Rehabilitation: 5. Preventive Conditioning</p>																							
27	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Aspect</th> <th style="width: 35%;">Kinetic Analysis</th> <th style="width: 50%;">Kinematic Analysis</th> </tr> </thead> <tbody> <tr> <td>Focus</td> <td>Examines forces and torques involved in movement.</td> <td>Analyzes motion parameters (positions, velocities, accelerations).</td> </tr> <tr> <td>Example</td> <td>Measuring ground reaction forces during sprinting.</td> <td>Tracking joint angles in a tennis serve.</td> </tr> <tr> <td>Tools</td> <td>Force plates, load cells, biomechanical sensors.</td> <td>Motion capture systems, video analysis software.</td> </tr> <tr> <td>Information Obtained</td> <td>Quantifies external and internal forces (e.g., ground reaction forces, muscle forces).</td> <td>Provides data on movement patterns, joint angles, and trajectories.</td> </tr> <tr> <td>Purpose</td> <td>Understands mechanical aspects influencing performance and injury risk.</td> <td>Evaluates movement quality, technique refinement, and skill optimization.</td> </tr> <tr> <td>Applications</td> <td>Used in injury prevention, biomechanical research, and optimizing training protocols.</td> <td>Enhances sports performance through technique analysis, skill development, and rehabilitation.</td> </tr> </tbody> </table>	Aspect	Kinetic Analysis	Kinematic Analysis	Focus	Examines forces and torques involved in movement.	Analyzes motion parameters (positions, velocities, accelerations).	Example	Measuring ground reaction forces during sprinting.	Tracking joint angles in a tennis serve.	Tools	Force plates, load cells, biomechanical sensors.	Motion capture systems, video analysis software.	Information Obtained	Quantifies external and internal forces (e.g., ground reaction forces, muscle forces).	Provides data on movement patterns, joint angles, and trajectories.	Purpose	Understands mechanical aspects influencing performance and injury risk.	Evaluates movement quality, technique refinement, and skill optimization.	Applications	Used in injury prevention, biomechanical research, and optimizing training protocols.	Enhances sports performance through technique analysis, skill development, and rehabilitation.	1 x 3	3
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28	<p>Comparison and Contrast:</p> <ul style="list-style-type: none"> ● Range of Motion: <ul style="list-style-type: none"> ○ Sagittal: Primarily involves forward and backward movements, maximizing linear acceleration and deceleration. ○ Frontal: Involves lateral movements, emphasizing stability and lateral agility. 	1 x 3	3																					

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	<ul style="list-style-type: none"> ○ Transverse: Focuses on rotational movements, essential for generating power and controlling direction. ● Functional Role: <ul style="list-style-type: none"> ○ Sagittal: Supports propulsion and acceleration in activities requiring straight-ahead motion. ○ Frontal: Enhances lateral stability, agility, and movement control in side-to-side actions. ○ Transverse: Facilitates rotational power generation and precise movement adjustments. ● Sports Examples: <ul style="list-style-type: none"> ○ Sagittal: Sprinting, jumping (e.g., long jump), and kicking (e.g., soccer). ○ Frontal: Side-stepping (e.g., football), lateral jumps (e.g., basketball), and skating. ○ Transverse: Golf swing, tennis serve, baseball pitching, and martial arts techniques. 		
29	<p>Contributions to Overall Development:</p> <ul style="list-style-type: none"> ● Physical Development: Achieving motor milestones supports physical growth and coordination, enabling infants to explore their surroundings and interact with objects and people. ● Cognitive Development: Sensory exploration and language acquisition during infancy foster cognitive skills essential for learning, problem-solving, and understanding the world. ● Socio-emotional Development: Early attachments and emotional expressions form the basis for future relationships and social interactions, influencing emotional resilience and social competence. 	3	3
30	<p>Coaches play a crucial role in helping athletes develop their skills in sports through structured training, personalized feedback, and psychological support. One effective way a coach can provide feedback to improve technique is through video analysis. By recording an athlete's performance during practice or competition, coaches can review specific movements, identify areas for improvement, and provide constructive feedback on technique adjustments. This visual feedback helps athletes visualize their actions, understand technical nuances, and make necessary corrections to</p>	3	3

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	enhance their overall performance in the sport.		
31 (a)	Speech therapist	1	1
31 (b)	Special educator	1	1
31 (c)	Intellectual Distability	1	1
31 (d)	<ol style="list-style-type: none"> 1. Ask before your help 2. Keep your tone low 3. Never play with their equipment (any one or any other appropriate etiquette) Or Adaptive physical education	1	1
32 (a)	Vo2 Max	1	1
32 (b)	Sit and reach test	1	1
32 (c)	Muscular Strength	1	1
32 (d)	Muscular Endurance Or 80 kg	1	1
33 (a)	Over Training	1	1
33 (b)	Drop in performance	1	1
33 (c)	Muscle soreness, irritability and disturb sleep	1	1
33 (d)	Improving performance	1	1
34	<p>Khelo India Programme: Launched in 2018, Khelo India aims to revive the sports culture in India at the grassroots level. It focuses on identifying and nurturing young talent across various sports disciplines through annual competitions at the school and college levels.</p> <p>Fit India Movement: Initiated in 2019 by Prime Minister Narendra Modi, the Fit India Movement promotes physical fitness and encourages people of all ages to adopt an active and healthy lifestyle. It includes awareness campaigns, fitness challenges, and community events.</p> <p>National Sports Development Fund (NSDF): Established to support the development of sports in India, NSDF provides financial assistance to talented athletes, training academies, and sports federations. It aims to improve sports infrastructure, coaching facilities, and international sports exposure for athletes.</p> <p>National Rural Sports Programme (NRSP): Introduced to promote sports and physical activity in rural areas, NRSP focuses on organizing sports competitions, establishing sports</p>	1 x 5	5

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	<p>infrastructure, and providing training opportunities to enhance participation and talent development in rural communities.</p> <p>Rashtriya Yuva Khel Abhiyan (RYKA): Launched to promote sports among youth, RYKA aims to develop a sports ecosystem at the district level. It includes the setting up of sports clubs, training camps, and organizing sports events to engage young individuals in physical activities and sports.</p>		
35	<p>Physiological Benefits:</p> <ol style="list-style-type: none"> 1. Detoxification: Many shat karmas involve cleansing techniques such as dhauti (cleansing of the digestive tract), which help remove toxins and waste products from the body. For example, kunjai kriya involves induced vomiting to cleanse the stomach and upper digestive system, aiding in detoxification. 2. Improved Digestive Health: Practices like jal neti (nasal cleansing with saline water) and sutra neti (nasal cleansing with a thread) help clear nasal passages and sinuses, improving respiratory health and enhancing the body's natural defense mechanisms against infections. 3. Enhanced Vitality: Techniques such as kapalabhati (skull shining breath) and trataka (gazing meditation) stimulate the nervous system and increase blood circulation, promoting vitality and energy levels in the body. <p>Psychological Benefits:</p> <ol style="list-style-type: none"> 1. Stress Reduction: Shat karmas often include practices like basti (colon cleansing) and nauli kriya (abdominal churning), which help release tension and stress stored in the abdominal area. This can lead to a sense of relaxation and mental clarity. 2. Mental Focus: Practices such as trataka (gazing meditation) and dhauti kriya (cleansing techniques) enhance concentration and improve mental focus, making them beneficial for individuals dealing with distractions and mental fatigue in modern lifestyles. <p>Holistic Health and Well-being: Shat karmas contribute to holistic health by addressing both physical and mental aspects of well-being. By purifying the body and mind, these practices create a foundation for overall health, longevity, and</p>	2+3	5

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	<p>spiritual growth in yoga traditions.</p> <p>Therapeutic Applications in Modern Lifestyles: In modern lifestyles, specific shat karmas are increasingly recognized for their therapeutic benefits:</p> <ul style="list-style-type: none"> ● Neti kriyas (nasal cleansing) are used to alleviate sinus congestion and respiratory allergies. ● Basti kriya (colon cleansing) is considered beneficial for digestive disorders and improving gut health. ● Trataka (gazing meditation) is practiced to enhance focus and alleviate eye strain from prolonged screen time. <p>In conclusion, yogic kriyas or shat karma play a vital role in promoting holistic health and well-being by combining physical purification with mental clarity and spiritual rejuvenation. These practices offer therapeutic benefits that are increasingly relevant and beneficial in addressing the challenges of modern lifestyles.</p> <p>"Discuss the concept of wellness and its dimensions. Explain how each dimension contributes to achieving holistic well-being. Provide examples to illustrate the practical application of wellness strategies in everyday life."</p>		
36	<ol style="list-style-type: none"> 1. Concept of Wellness: Define wellness as a holistic approach to health that encompasses physical, mental, emotional, social, and spiritual well-being. Highlight its proactive nature in promoting optimal health and quality of life. 2. Dimensions of Wellness: <ul style="list-style-type: none"> ○ Physical Wellness: Focus on maintaining a healthy body through regular exercise, balanced nutrition, and adequate rest. Example: Engaging in daily physical activity and following a nutritious diet to improve cardiovascular health. ○ Mental Wellness: Emphasize mental health and cognitive function through stress management, positive thinking, and mindfulness practices. Example: Practicing meditation or yoga to reduce anxiety and enhance mental clarity. 	1 x 5	5

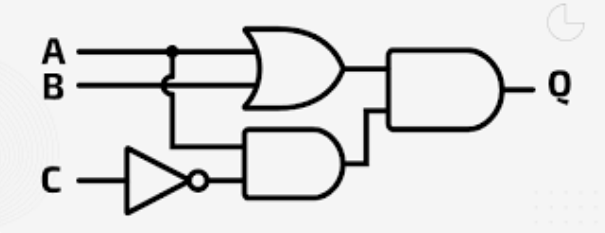
Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	<ul style="list-style-type: none"> ○ Emotional Wellness: Addressing emotions effectively, fostering resilience, and developing healthy coping mechanisms. Example: Seeking support from friends or counselors during challenging times to maintain emotional balance. ○ Social Wellness: Nurturing meaningful relationships, fostering a sense of belonging, and contributing positively to the community. Example: Volunteering for community service activities to strengthen social connections and support networks. ○ Spiritual Wellness: Exploring personal beliefs, values, and purpose in life to find meaning and inner peace. Example: Engaging in spiritual practices such as prayer, reflection, or nature walks to enhance spiritual well-being. <p>3. Contributions to Holistic Well-being: Discuss how each dimension of wellness interacts with others to create a balanced and fulfilling life. Emphasize the interconnectedness and synergy among physical, mental, emotional, social, and spiritual dimensions.</p> <p>4. Practical Application: Provide real-life examples or scenarios where individuals integrate wellness strategies into their daily routines to enhance overall well-being. Highlight the importance of personalized approaches and proactive health management.</p>		
37	<p>Adolescents who succumb to peer pressure and engage in substance abuse are at higher risk of various negative consequences, including impaired academic performance, health problems, legal issues, and strained relationships with family and peers. The impact can be long-lasting, affecting their future opportunities and well-being.</p> <p>Strategies for Prevention and Management:</p> <p>1. Education and Awareness Programs:</p> <ul style="list-style-type: none"> ○ Schools can implement comprehensive substance abuse prevention programs that educate students about the risks and consequences of drug and alcohol use. These programs should include factual information, 	2+3	5

Q.N O:	KEY POINTS/ VALUE POINTS	ALLOTTE D MARKS	TOTAL MARKS
	<p>discussions on peer pressure, and strategies for resisting temptation.</p> <p>2. Promoting Positive Peer Influence:</p> <ul style="list-style-type: none"> ○ Encouraging positive peer relationships and creating a supportive school environment can mitigate negative peer pressure. Schools can foster peer support groups, mentoring programs, and leadership opportunities that promote healthy behaviors and discourage substance use. <p>3. Parental Involvement and Communication:</p> <ul style="list-style-type: none"> ○ Parents play a crucial role in preventing substance abuse by maintaining open communication with their adolescents. Establishing clear expectations, setting boundaries, and discussing the risks of substance use can empower adolescents to make informed decisions and resist peer pressure. <p>4. Role of Community and Support Services:</p> <ul style="list-style-type: none"> ○ Community organizations, healthcare providers, and mental health professionals can collaborate with schools to provide resources and support for adolescents struggling with substance abuse. Access to counseling, peer support groups, and addiction treatment services is essential for intervention and recovery. <p>5. Policy and Enforcement:</p> <ul style="list-style-type: none"> ○ Implementing and enforcing school policies that prohibit substance use on campus and during school-related activities can deter adolescents from experimenting with drugs and alcohol. Consistent enforcement and consequences for policy violations reinforce the message that substance abuse is unacceptable. 		

Marking Scheme 2024-2025
Class :XI
Subject: Computer Science(083)

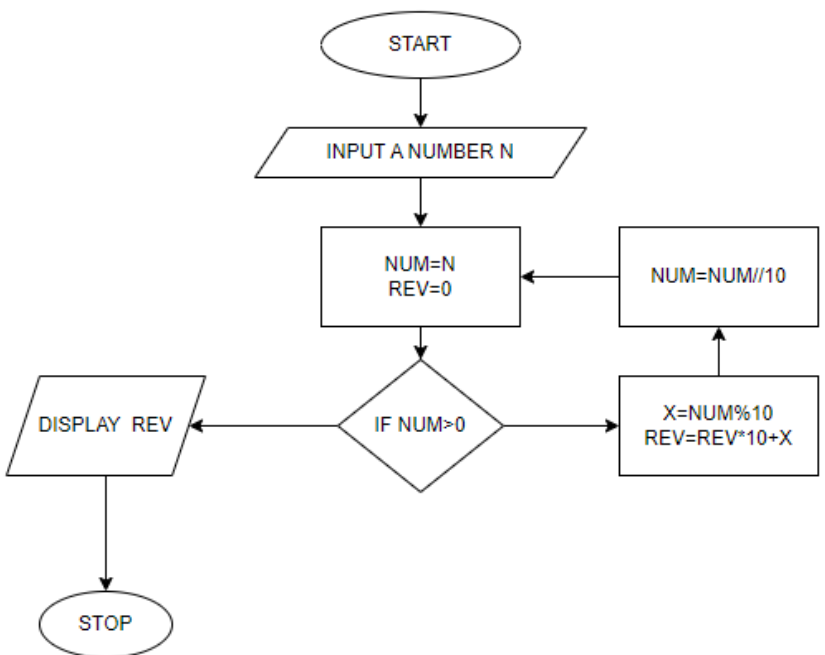
	Section A	Marks
1.	a. Sum#	1
2.	c. Ubuntu	1
3.	d. statement 4	1
4.	c. UTF-128	1
5.	b. Exclusive OR Gate	1
6.	d. zottabyte	1
7.	c. ('Learn today ', 'Lead', ' tomorrow')	1
8.	c. Phishing	1
9.	d. statistics	1
10.	b. 34.0	1
11.	d. 5	1
12.	b. Spyware	1
13.	b. Change her social media privacy settings to restrict who can see her posts	1
14.	a. Found	1
15.	a. A license that allows users to view and modify the source code of the software	1
16.	b. Including a clear subject line and polite greeting	1
17.	a. Both A and R are True and R is the correct explanation for A.	1
18.	c. A is True but R is False.	1

Section B		
19	<p>a. Embedded Operating System b. Multi-user Operating System</p> <p style="text-align: center;">OR</p> <p>Rahul's laptop is likely using the Unicode encoding scheme, specifically UTF-8, UTF-16, or UTF-32. Unicode is designed to support a wide range of characters from many different languages, including Chinese, Arabic, and Russian. Sakshi's Laptop is using older and limited encoding scheme. Unicode is better than many encoding schemes because it is supported by many softwares and internet protocols. (any valid reason should be marked appropriately)</p>	<p>1+1</p> <p>1 mark for identifying correct encoding scheme 1 mark for correct reason</p>
20	<pre>d = {'a':1,'b':2,'c':3} n = {} values = d.values() keys = list(d.keys()) k = 0 for i in values: n[i] = keys[k] k+=1 print (n)</pre>	<p>$\frac{1}{2} * 4 = 2$</p>
21	<p>Syntax errors occur when code violates syntax rule of the programming language preventing it from running. Detection occurs during compilation or interpretation. Logical errors arise when code is syntactically correct but produces incorrect results due to flaws in algorithm or logic.</p> <p style="text-align: center;">OR</p> <pre>{'Ertiga': 8, 'XUV': 6, 'Innova': 8} {'Ertiga': 8, 'XUV': 6, 'Innova': 8, 'Swift': 5}</pre>	<p>1+1</p>
22	<p>a. Yes, by sharing her geolocated pictures, Shikha is leaving a digital footprint. She can manage her digital footprints by using privacy settings on social media, avoiding sharing personal information online, using a VPN, deleting search history and cookies, and setting up two-factor authentication.</p> <p>b. Netiquettes are the code of good behavior on the internet. They are guidelines for courteous communication and interaction online.</p> <p>Netiquettes Shikha Should Follow on Social Media (Any one):</p> <ol style="list-style-type: none"> Respect Privacy Think before posting Respect others Opinions Be mindful of language and tone (any relevant point must be marked) <p style="text-align: center;">OR</p> <p>In India, the primary legal body that deals with appeals regarding cyber-related issues is the Cyber Appellate Tribunal (CAT). The CAT operates under the jurisdiction of the Information Technology Act, 2000, which provides a legal framework for addressing cyber crimes, frauds, cyber attacks, and cyber bullying</p>	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p>

23	 <p>OR</p> <p>a. $(2220)_{10}$ b. $(272.6)_8$</p>	1 1 2																														
24.	<p>Possible Outcomes:</p> <p>a. Mango@Cherry@ b. Orange@Mango@Cherry@</p> <p>Maximum value of t:4 Minimum Value of t:2</p>	2																														
25	<p>a. 2×2^{30} KB b. Truth Table for $((A.B)' + (A.B))' = (A.B)$</p> <table border="1" data-bbox="215 982 1222 1287"> <thead> <tr> <th>A</th> <th>B</th> <th>A.B</th> <th>$(A.B)'$</th> <th>$(A.B)' + (A.B)'$</th> <th>$((A.B)' + (A.B))'$</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table>	A	B	A.B	$(A.B)'$	$(A.B)' + (A.B)'$	$((A.B)' + (A.B))'$	0	0	0	1	1	0	0	1	0	1	1	0	1	0	0	1	1	0	1	1	1	0	0	1	1+1=2
A	B	A.B	$(A.B)'$	$(A.B)' + (A.B)'$	$((A.B)' + (A.B))'$																											
0	0	0	1	1	0																											
0	1	0	1	1	0																											
1	0	0	1	1	0																											
1	1	1	0	0	1																											

Section C		
26	<pre>s= eval(input('Enter a list of integers')) sum35=0 ctr=0 for i in s: if i%3==0 or i%5==0: sum35+=i ctr +=1 print ('Average is : ', sum35/ctr) Or ipaddress=input("Enter an IP address") parts=ipaddress.split(".") flag=1 if len(parts)==4: pass else: flag=0 for part in parts: if part.isnumeric()==False: flag=0 break p=int(part) if p>=0 and p<=255: pass else: flag=0 break if flag==1: print("Valid IP Address") else: print("Invalid IP Address")</pre>	<p>3=</p> <p>½ for creating list</p> <p>½ +½ for initializing sum,counter</p> <p>1 mark for loop and if statement</p> <p>½ for printing result</p> <p>½ for input, ½ for split,</p> <p>½ for checking exact 4 parts in ip address</p> <p>1 mark for checking the integer portion values of ip address,</p> <p>½ for printing result</p>

27



½ for start stop

½ for input

½ for initializing

½ for conditional loop

½ for incrementing and loop counter

½ for printing output

28

10
50
287

1+1+1

29

(a)->(i) Phishing (ii) Ransomware

(b) Adware is a type of **malware** that displays unwanted advertisements on your computer or device. Adware is commonly activated unknowingly when users are trying to install legitimate applications that adware is bundled with.

Lagging performance and eventual crashing, Unrequested changes to your browser homepages, Appearance of new extensions and toolbars, Web pages not displaying properly, Unwanted software installing etc.

(0.5+0.5)

(2)

30	<pre>s=int(input("Enter your total annual income")) status=input("Are you from agricultural sector y/n") tax=0 if s<=300000: tax=0 elif s<=600000: tax=0.05 *(s-300000) elif s<=1000000: tax=300000*0.5 + 0.1*(s-300000) elif s<=2000000: tax= 300000*0.5+ 0.1*400000+ 0.2*(s-1000000) else: tax=300000*0.5+ 0.1*400000+ 0.2*1000000+0.3*(s-2000000) if status=="y": tax= 0.95*tax print("total tax=",tax)</pre>	<p>1 mark for inputting values,</p> <p>1 mark for if .. else</p> <p>½ mark for deducting 5% tax,</p> <p>½ marks for printing result</p>
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Section D		
31	<p>(a)(i) print(s[:6]) or print(s[:6:]) (ii) print(s[:5:2]) (iii) print(s[:-1]) (iv) print(s[5::-1]).lower()</p> <p>(b) x='Today is my computer exam' for c in x[::2]: print(c)</p>	<p>½ x4=2</p> <p>½ for initializing string, 1 ½ for proper loop</p>
32	<p>(a)</p> <p>(i) import statistics l=[1,2,3,1,2,4,5,1,5] print(statistics.mode(l))</p> <p>(ii) import string st='Hello everyone' print(st.title())</p> <p>(b)</p> <p>(i) t=(2*a) * math.sqrt(l)/g</p> <p>(ii) v2=v1 + (3 * math.sin(x) * math.cos(x)**2)</p>	<p>1+1</p> <p>1+1</p>

35	<p>(a) c. Plagiarism.</p> <p>(b) Hacking</p> <p>(c) Identity Theft</p> <p>(d) - under representation of girls - Nowadays girls can find very few role models in the field of 'Computer Science' whom they can imitate.</p> <p>OR</p> <p>(a)1. E- waste can lead to release of toxic and hazardous gasses that has a very ill effect on our lungs/ nervous system etc -E-waste is non biodegradable and accumulates in the environment.</p> <p>2. i) Recycling ii) refurbish and reuse</p> <p>(b)</p> <p>1. No, it is not suggested sharing the PIN number through SMS on the given contact number because it might be a phishing attempt to steal sensitive information.</p> <p>2. Do not respond to the SMS , verify your account and keep track of your account.</p>	<p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p>
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Sample Question Paper 2024-2025

Class : XI

Subject: Computer Science(083)

Max Time:3 Hours

Maximum Marks:70

General Instructions:

1. This question paper contains five sections, **Sections A to E**.
2. All questions of a particular section must be attempted in the correct order.
3. SECTION A has 18 Objective Type Questions of 1 mark each.
4. SECTION B has 07 Very Short Answer Type Questions carrying 02 marks each.
5. SECTION C has 05 Short Answer Type Questions carrying 03 marks each.
6. SECTION D has 02 Questions carrying 04 marks each.
7. SECTION E has 03 Questions carrying 05 marks each.
8. All programming questions are to be answered using Python Language only

Section A		
1.	Which of the following is an invalid identifier in Python? a. Sum# b. pie c. For d. _school	1
2.	Identify the system software from the software mentioned below : a. Antivirus b. Disk defragmenter c. Ubuntu d. Spreadsheet	1
3.	Identify the statement with an error in the code given below:: str= "Bharat Udhyam" #statement 1 x= '3' #statement 2 print(str*3) #statement 3 print(str*x) #statement 4 a) statement 1 b) statement 2 c) statement 3 d) statement 4	1
4.	Which of the following is not a valid encoding scheme in computer? a. ASCII b. ISCII c. UTF-128 d. UTF-8	1

5.	<p>Which of the following is the correct expansion of XOR gate ?</p> <ol style="list-style-type: none"> Extra OR gate Exclusive OR gate not of OR gate ONLY OR gate 	1
6.	<p>Which of the following is not a unit of memory in computer system</p> <ol style="list-style-type: none"> Byte KiloByte Yottabyte Zottabyte 	1
7.	<p>Select the correct output of the code:</p> <pre>t1= "Learn today Lead tomorrow" d=t1.partition('Lead') print(d)</pre> <ol style="list-style-type: none"> 'Learn today ', 'Lead', ' tomorrow' ['Learn today ', 'Lead', ' tomorrow'] ('Learn today ', 'Lead', ' tomorrow') {'Learn today ', 'Lead', ' tomorrow'} 	1
8.	<p>Ramesh received an email asking to click a link to complete his registration with a bank. After clicking the link, he was taken to a site designed to imitate an official looking website. The web page opened asked to enter his personal and confidential information.</p> <p>Identify the type of cyber crime in the above case.</p> <ol style="list-style-type: none"> Spamming Bullying Phishing Eavesdropping 	1
9.	<p>import mean from _____ L=[1,2,3,4,5,6,7,8,9,10] print (mean(L))</p> <p>Consider the above code and select the appropriate module</p> <ol style="list-style-type: none"> math statistic mean statistics 	1

10.	<p>Predict the correct output of the code given below:</p> <pre> a =10 b =3.4 c =2 a -=b a *=3+c b +=a*2 b =b//2 print(b) </pre> <p>a. 69.4 b. 34.0 c. Error d. 34</p>	1
11.	<p>What will be the output of the following code?</p> <pre> D1={1: "One",2: "Two", 3: "C"} D2={4: "Four",5: "Five"} D1.update(D2) print (max(D1)) </pre> <p>a) 'Five' b) Error c) [5: "Five"] d) 5</p>	1
12.	<p>ABC corporation has discovered that sensitive customer data has been leaked online. After a thorough investigation, it was found that a piece of malware had infiltrated their systems, exploiting a vulnerability in their email software. The malware was able to exfiltrate data over several months without detection.</p> <p>Identify which type of Intellectual property right is violated here</p> <p>What type of malware is most likely responsible for this data breach?</p> <p>a. Ransomware b. Spyware c. Adware d. Phishing</p>	1
13.	<p>Farah, a college student and she frequently posts pictures, status updates, and location check-ins on various social media platforms. One day, she notices that a stranger has started following her and commenting on her posts. She becomes concerned about her safety and privacy.</p> <p>What immediate action can Farah take to protect her digital footprint?</p> <p>a. Increase her social media activity b. Change her social media privacy settings to restrict who can see her posts c. Share more personal information to confuse the stranger d. Ignore the stranger and continue as usual</p>	1

14.	<p>Select the option with correct output of the following statement:</p> <pre> name = ['Nutan', 'Sonali', 'Sonia', 'Dev'] if 'Kapil': print ('Found') else: print ('Not Found') a. Found b. Not Found c. Nutan d. Error </pre>	1
15.	<p>What is an open source license?</p> <p>a. A license that allows users to view and modify the source code of the software b. A license that restricts access to the software source code c. A license that only allows personal use of the software d. A license that prohibits commercial use of the software.</p>	1
16.	<p>When sending an email, which of the following is considered good netiquette?</p> <p>a. Using all capital letters to emphasize your point b. Including a clear subject line and polite greeting c. Ignoring email etiquette rules if the recipient is a close friend d. Sending large attachments without warning the recipient</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Make the correct choice as</p> <p>a. Both A and R are True and R is the correct explanation for A. b. Both A and R are True and R is not the correct explanation for A. c. A is True but R is False. d. A is False but R is True.</p>	
17.	<p><u>Assertion(A):</u> Substring and string slices of a string are not the same though both of them refer to the subparts of the strings <u>Reason(R):</u> A substring contains continuous subpart(s) of the string whereas string slices may or may not contain continuous subpart(s) of a string.</p>	1
18.	<p><u>Assertion(A):</u> The append function does not work with tuples. <u>Reasoning(R):</u> Tuples support addition using '+' operator and not using append function.</p>	1

Section B

19.	<p>Which type of operating system is primarily designed for the following:</p> <p>a. Managing and controlling the devices such as washing machines and MRI machines?</p> <p>b. To support multiple users simultaneously, often found in institutions and organizations?</p> <p style="text-align: center;">OR</p> <p>Rahul can view and type characters from languages such as Chinese, Arabic, and Russian on his laptop, while Sakshi cannot. What might be the encoding scheme used on Rahul's laptop, and why is it more suitable for multi-language support compared to the encoding scheme on Sakshi's laptop?</p>	2
20.	<p>Consider the following code written by a programming student. The student is a beginner and has made few errors in the code. You are required to rewrite the code after correcting it and underline the corrections.</p> <pre>d = {'a':1,'b':2,'c':3} n = {} values = d.values() keys = list(d.keys[]) k = 0 for i in values n(i) = keys[k] k+=1 print (n)</pre>	2
21.	<p>What is the difference between logical and syntax errors in python?</p> <p style="text-align: center;">OR</p> <p>What will be the output of the following code:</p> <pre>Cars={"Ertiga":7, "i20":4, "XUV" :6, "Innova":8} Cars["Ertiga"]=8 Cars.pop("i20") print(Cars) Cars["Swift"]=5 print(Cars)</pre>	2

22.	<p>Shikha has created her facebook account in which was asked to enter her basic details. She has not used any advanced privacy setting . She updates her profile every now and then.</p> <p>Shikha plans a trip to Himachal Pradesh and uploads her geo located pictures of the trip.According to her situation answer the following questions:</p> <p>a. By Sharing her geolocated pictures is Shikha leaving a digital footprint? What steps can be taken to minimize or manage one's digital footprint?.</p> <p>b. What are netiquettes? Explain any one netiquette that must be followed by Shikha on Social media?</p> <p style="text-align: center;">OR</p> <p>With the growth of the Internet, many cases of cyber crimes, frauds, cyber attacks and cyber bullying are reported. Which legal body in India deals with appeals regarding cyber -related issues and how?</p>	2
23.	<p>Draw the logic circuit diagram of the following Boolean expression: $F=(A+B).(A.C')$</p> <p style="text-align: center;">OR</p> <p>Convert the following:</p> <p>a. $(8AC)_{16} = (\dots\dots\dots)_{10}$</p> <p>b. $(10111010.110)_2 = (\dots\dots\dots)_8$</p>	2
24.	<p>Observe the following python code and find the possible output(s) from the possible output(s) from option (a) to (d). Also, write the minimum and maximum values that can be possibly assigned to variable 't'.</p> <pre>import random display=("Apple", "Orange", "Mango", "Cherry") s=random.randint(1,3) t=random.randint(2,4) for i in range(s,t): print(display[i], end="@")</pre> <p>a.Mango@Cherry@ b.Mango@Apple@ c.Orange@Mango@Cherry@ d.Orange@Apple@</p>	2
25.	<p>a. Do the following memory conversion $2 \times 2^{10} \text{ GB} = \text{_____ KB}$</p> <p>b. Prove the following equality using truth table : $((A.B)' + (A.B)')' = (A.B)$</p>	2

SECTION C

26.	<p>Write a program to input 10 integers from the user and print average of all those integers which are multiples of 3 or 5. For Example, If the list is: [9,13,15,18,22,28] Then the output should be: 14.0</p> <p style="text-align: center;">OR</p> <p>Write a python program that accepts a string containing IP address from user and then print "Valid IP address" if user inputs a valid IP address otherwise the program print "Invalid IP address" NOTE :An IP Address is of the format n1.n2.n3.n4 where all the four numbers n1,n2,n3,n4 have values ranging from 0 to 255 and each number is separated by a period (.) character. For example : 90.160.1.58 is a valid IP address and 265.14.8.9 is an invalid IP address</p>	3
27.	Draw a flowchart print reverse of a number	3
28.	<p>What will be the output of the Python code given below:</p> <pre>list=[10,21,31,45,50] s=0 for x in list: if x%2==0: s=s+(2*x) print(x) elif x%3==0: s=s+(3*x) else: s=s-x print(s)</pre>	3
29.	<p>a. Fill in the blank with the appropriate term (i) A fake email from a bank asking you to click a link and verify your account details is an example of _____.</p> <p>(ii) _____ is a type of malware that locks and encrypts a victim's data, files, devices or systems, rendering them inaccessible and unusable until the attacker receives a ransom payment.</p> <p>b. What is an Adware and what are the issues that you face if your system is infected with adware?</p>	3

30	<p>Write a Python code to input Salary of a person from user and ask whether the person is from agriculture sector or not. The program should calculate the income tax as per the criteria given below and display income tax. An extra 5% deduction on in total tax is to be given for person with agricultural sector.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Salary</th> <th style="text-align: left;">Income tax</th> </tr> </thead> <tbody> <tr> <td>UPTO 300000</td> <td>NIL</td> </tr> <tr> <td>300001 - 600000</td> <td>5%</td> </tr> <tr> <td>600001-. 1000000</td> <td>10%</td> </tr> <tr> <td>1000001-2000000</td> <td>20%</td> </tr> <tr> <td>Above 2000001</td> <td>30%</td> </tr> </tbody> </table> <p>2. Deduct 5% of the total tax if the person is from agriculture sector.</p>	Salary	Income tax	UPTO 300000	NIL	300001 - 600000	5%	600001-. 1000000	10%	1000001-2000000	20%	Above 2000001	30%	3
Salary	Income tax													
UPTO 300000	NIL													
300001 - 600000	5%													
600001-. 1000000	10%													
1000001-2000000	20%													
Above 2000001	30%													

Section D

31.	<p>a. Given a string s="Python is very interesting" Write a statement to produce the following output: (i) Python (ii) pto (iii) print reverse of the entire string (iv) print nohtyp</p> <p>b. Rewrite the following while loop into its equivalent for loop x="Today is my computer exam" i=0 while i < len(x): print(x[i]) i=i+2</p>	<p>½ x4</p> <p>2</p>
32.	<p>a. Write python statements to do the following by using library function and importing appropriate library module in python: i. To print mode of the list l=[1,2,3,1,2,4,5,1,5] ii. To print a string str with the first letter of each word of the string in uppercase .</p> <p>b. Write the equivalent python expressions for the following mathematical expressions (i) $T = 2a \cdot \sqrt{L/g}$ (ii) $v_2 = v_1 + 3 \sin x \cdot \cos^2 x$</p>	2+2

Section E

33.	<p>a. Find the output of the following python code:</p> <pre>(i) str1="Program 2.0" n1 = len(str1) m="" for i in range(0, n1): if (str1[i] >= 'g' and str1[i] <= 'p'): m = m +str1[i].upper() elif (str1[i].isdigit()): m = m + '*' else: m = m + '&' print(m)</pre> <p>b. WAP to accept a string from the user and count the number of times character 'a' appears in the string irrespective of uppercase or lowercase. Without using library function count.</p> <p>c. Find correct output :</p> <pre>x=3 if x>2 or x<5 and x==6: print("ok") else: print("no output")</pre>	2+2+1
34.	<p>Mishti has to create a program to store the names of countries as keys and their capital names as values . Help her to do so by giving a set of commands for the following that she can add to her program. Assume the dictionary name to be country.</p> <ol style="list-style-type: none"> to add a country 'India' with its capital 'New Delhi' and add it to the dictionary if the country is not already entered. To add another dictionary c2 with the similar key:value pairs to the dictionary country. To remove the country 'Bhutan' from the dictionary. To display names of all countries. <p>OR</p> <p>Consider the following commands being run in sequence for the dictionary and give the output accordingly:</p> <pre>inventory= {'Pen':20, 'Eraser':50, 'pencil': 50, 'paint brush':30}</pre> <ol style="list-style-type: none"> print (inventory['Pen']) inventory['Wax crayons']=15 print (list(inventory.values())) print (inventory.update({'notebook':23})) print (inventory.popitem()) print (inventory.fromkeys(['sample paper', 'stamp'],(80))) 	2+1+1 =5

35.	<p>Case Study</p> <p>Shefali is very comfortable online and she keeps downloading data from the internet. She has to prepare a documentary on girl child but she downloaded a 2-minute clip from the internet explaining the gender discrimination in learning computers in rural areas . Using a video editor, she writes her name in the author / director of the video clip. She then emails the modified video clip to her teacher. She noticed that one of her friends who keeps visiting her house frequently is having all the presentations created by her without her permission.</p> <ol style="list-style-type: none"> 1. Identify the cyber crime committed by Shefali in this case from the following: <ol style="list-style-type: none"> (a) Cyber Bullying (b) Hacking (c) Plagiarism (d) Phishing 2. What type of cyber crime she has been a victim of in the above situation. 3. Her friend told her that someone has created a fake profile of her on instagram defaming his/her character with objectionable comments and pictures. 4 Give any two issues that can be incorporated in the video showing gender and disability issues while teaching computers 	<p>1</p> <p>1</p> <p>1</p> <p>2</p>
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	<p style="text-align: center;">OR</p> <p>a. It has been evident that with new technological advancement a lot of new electronic devices with many features are coming. The existing devices becomes obsolete and result in replacement of many gadgets and equipment . Due to this a problem of managing the E-waste has become a great concern .</p> <p>Answer the following questions based on above situation:</p> <ol style="list-style-type: none"> 1. State any one problem arising due to E-waste. 2. Write any two eco -friendly ways of E-waste disposal. <p>b. You got the below shown SMS from your bank querying a recent transaction. "Bank has noticed that your ATM card was recently used at ShoppersZ online store on June 27,2024 at 2:30 pm for Rs 35,000. If the transaction was not carried by you, urgently SMS your PIN No. on phone number : 0406271427."</p> <p>Answer the following questions based on above situation giving reasons for your answers:</p> <ol style="list-style-type: none"> 1. Is it suggested sharing the pin number through SMS on the given contact no. ? Why or why not? 2. Suggest a suitable step to avoid being a victim in this situation. 	<p>1</p> <p>1</p> <p>1</p> <p>2</p>
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