

ENGLISH CORE-Code No. 301
SAMPLE QUESTION PAPER
CLASS-XII-(2025-26)

Time allowed: 3 Hrs.

Maximum Marks: 80

General Instructions

Read the following instructions very carefully and follow them:

- i. This question paper has 13 questions. All questions are compulsory.
- ii. This question paper contains three sections:
 - Section A: Reading Skills,
 - Section B: Creative Writing Skills
 - Section C: Literature.
- iii. Attempt all questions based on specific instructions for each part. Write the correct question number and part thereof in your answer sheet.
- iv. Separate instructions are given with each question/part, wherever necessary.
- v. Adhere to the prescribed word limit while answering the questions.

SECTION A
READING SKILLS

(22 marks)

1. Read the following passages.

12

Ours was the marsh country, down by the river, within twenty miles of the sea. My first most vivid and broad impression of the identity of things seems to me to have been gained on a memorable raw afternoon towards evening. The low leaden line beyond was the river; and that the distant savage lair from which the wind was rushing was the sea; and that the small bundle of shivers growing afraid of it all and beginning to cry, was Pip.

“Hold your noise!” cried a terrible voice, as a man started up from among the graves at the side of the bushes. “Keep still, or I’ll make you pay!”

A fearful man, all in coarse grey, with a great iron on his leg. A man with no hat, and with broken shoes, and with an old rag tied round his head. A man who had been soaked in water, and smothered in mud, limped, and shivered, and glared, and growled; and whose teeth chattered in his head as he seized me.

“Tell us your name!” said the man. “Quick! Give it mouth!”

“Pip. Pip, sir.”

“Show us where you live,” said the man. “Point out the place!”

The man, after looking at me for a moment, emptied my pockets. There was nothing in them but a piece of bread which he ate ravenously.

"Now lookee here!" said the man. "Where's your mother?"

"There, sir!" said I.

He started, made a short run, and stopped and looked over his shoulder.

"Oh!" said he, coming back. Who's that?" he asked, pointing.

"My sister, sir, —Mrs. Joe Gargery, —wife of Joe Gargery, the blacksmith, sir."

"Blacksmith, eh?" said he. And looked down at his leg.

After darkly looking at his leg, he came close to me, took me by both arms, and tilted me back as far as he could hold me; so that his eyes looked most powerfully down into mine, and mine looked most helplessly up into his.

"Now lookee here," he said, "You know what a file and wittles is?"

"Yes, sir."

After each question he tilted me over a little more, so as to give me a greater sense of helplessness and danger.

"You get me a file." He tilted me again. "And wittles." He tilted me again. "You bring 'em both to me."

I was dreadfully frightened, and so giddy that I clung to him with both hands, and said, "If you would kindly please to let me keep upright, sir, perhaps I shouldn't be sick, and perhaps I could attend more."

He did. Then, he held me by the arms, in an upright position, and went on with his terms.

Source: Great Expectations by Charles Dickens / 448 words

Answer the following questions, based on the passage above.

I	Which textual evidence tells us that Pip was trembling?	1
II	Complete the following with a suitable reason.	1
	The writer refers to the sea as a 'savage lair' in order to tell the reader that ____.	
III	The writer emphasises Pip's vulnerability in all of the following ways EXCEPT —	1
	A. through the description of the harsh landscape	
	B. via the behaviour of the frightening man	
	C. through Pip's helplessness and fear	
	D. via Pip's knowledge of the surrounding area	
IV	What type of statement is made in the phrase "Keep still, or I'll make you pay!"?	1
	A. caution	
	B. threat	
	C. prediction	
	D. announcement	

V Based on his initial appearance, how can we say that the 'fearful man' was in a state of discomfort? (Any one reason) 1

VI. Which one of the following statements best explains the phrase "Give it mouth!"? 1
A) Speak loudly B) Open your mouth wide C) Answer the question

VII. The man ate the bread 'ravenously'. What does this suggest about his condition? 1

VIII. What does the man's question, "Where's your mother?" and his reaction when Pip points to her suggest about his intentions? (Answer in about 40 words) 2

IX. How does the man's action of forcing Pip to look up at him contribute to the tension in the scene? (Answer in about 40 words) 2

X. Complete the following with the most suitable option. 1

The main idea of the text is _____.

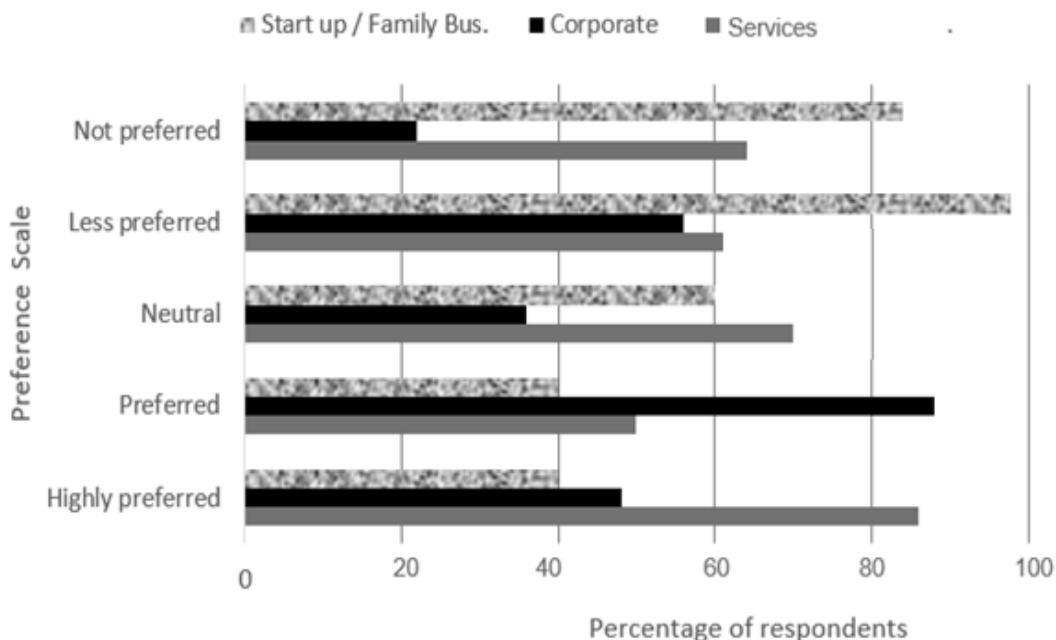
- A. Pip's encounter with a frightening man who demands information
- B. the harshness of Pip's environment and the fear it creates
- C. Pip's struggle to understand the man's intentions and stay calm
- D. the importance of family relationships in Pip's life

2. Read the following carefully. 10

1 A recent survey was conducted among 2,000 college students and young professionals to analyse preferences for different types of jobs, including corporate roles, personal start-ups or family businesses, and service professions (example - defense, nursing, police). The study aimed to identify trends in career aspirations, the factors influencing these preferences, and their implications for workforce planning and education systems. Participants were asked to rank their preferences on a five-point scale.

2 The study covered respondents across urban and semi-urban areas, representing diverse educational, economic, and cultural backgrounds. Researchers ensured diversity in gender, socioeconomic status, and career stages to make the findings representative of a broad spectrum of opinions. Data collection involved online questionnaires and in-person interviews, ensuring a comprehensive understanding of job preferences. The data was displayed as a bar graph given below.

Student Preferences for Type of Job



- 3 Corporate jobs were commonly associated with financial stability, growth opportunities, and access to structured career paths. Start-ups and family businesses, on the other hand, appealed to those valuing autonomy, creativity, and the chance to work in more flexible environments. Service professions were perceived as fulfilling and prestigious, especially among individuals motivated by a sense of duty.
- 4 The survey also highlighted several challenges. Geographic variations were significant, with urban respondents gravitating more toward corporate roles, while semi-urban participants showed a stronger inclination for service professions and family businesses. Respondents indicated limited mentorship opportunities and a lack of clarity about the long-term prospects of non-corporate careers as barriers influencing their decisions.
- 5 The findings provide a foundation for further research into how cultural, regional, and generational influences shape career choices. Future studies could explore factors such as gender-based preferences, emerging industries, mentorship availability, and the role of technological advancements in shaping job markets. Additionally, longitudinal research could track how these preferences evolve as respondents advance in their careers. This could help educational institutions and employers develop tailored strategies to better align with the aspirations and values of young job seekers. Moreover, policies encouraging skill development and mentorship programmes may bridge the gaps identified in this survey, ensuring more informed career decisions among youth.

Created for academic usage / 348 words

10

Answer the following questions, based on the given passage.

I. What was the main purpose of the survey conducted among 2,000 college students and young professionals? 1

- A. To determine the popularity of specific jobs in rural areas versus urban areas
- B. To explore patterns in career aspirations and the factors influencing them
- C. To analyse the success rate of startups and family businesses
- D. To assess the salary expectations of young professionals opting for jobs

II. Fill in the blank with the correct option from those given in brackets. 1

The study ensured diversity in gender, socioeconomic status, and career stages to make the findings _____ (accurate / representative / specific).

III. Fill in the blank with reference to the given bar graph chart.

The profession preference for which policymakers primarily need to provide encouraging incentives is _____. 1

For the Visually Impaired Candidates

Complete the following suitably.

When the researcher uses the phrase 'a broad spectrum of opinions' in the line 'to make the findings representative of a broad spectrum of opinions', the researcher refers to _____. (Ref: Paragraph 2)

IV. Based on the bar graph, which of the following statements best reflects the correct trend in job preferences?

- A. Corporate jobs are more in the 'Least preferred' category than service professions. 1
- B. Service professions are less preferred than corporate jobs on the 'Neutral' scale.
- C. Service professions have a higher percentage of respondents marking them as 'Highly Preferred' compared to corporate jobs.
- D. Corporate jobs and service professions have an equal percentage of respondents marking them as 'Preferred.'

For the Visually Impaired Candidates

Why does the researcher associate start-ups and family businesses with individuals who value autonomy? (Ref: Paragraph 3)

- A. They allow individuals to independently make decisions and innovate.
- B. They guarantee long-term financial security and growth.
- C. They require minimal risk-taking and provide fixed schedules.
- D. They are managed by corporate guidelines ensuring stability.

V. Riya wishes to have a regular salary and defined growth in her career. Why is a corporate job better suited for her compared to joining a start-up or family business? 2
 (Ref: Paragraphs 3 & 4)

VI. When the researcher says 'Respondents indicated limited mentorship opportunities,' 1
 what does s/he mean by 'limited mentorship opportunities'?

- A. Lack of financial resources to hire mentors for jobs
- B. Absence of training programmes in semi-urban areas
- C. Reluctance of respondents to seek career advice from unknown people
- D. Difficulty in finding experienced professionals to guide career paths

(Ref: Paragraph 4)

VII. How might further studies in the understanding of emerging industries and 2
 technological advancements empower youth to make well-informed career decisions?
 (Ref: Paragraph 5)

VIII. Select the option that is **NOT** addressed in this study. 1

- A. The purpose of the survey
- B. The impact of gender on career preferences
- C. Regional and demographic variations in preferences
- D. Challenges faced by respondents
- E. The methodology used for data collection

SECTION B
CREATIVE WRITING SKILLS (18 marks)

All the names and addresses used in the questions are fictitious. Resemblance, if any, is purely coincidental.

3. Attempt any one of the two, (A) or (B), in about 50 words 1x4=4

A. You are Daljeet Kaur, a member of the Teen Well-Being Association, Chandigarh. The Association is planning to organise free pottery classes every Sunday morning at the community hall to encourage creativity among young residents. Write a notice in about 50 words, informing the residents of the event and inviting registrations. Include all the necessary details. Put your notice in a box.

OR

B. You are Keerthi, the Secretary of the Environmental Club of ABC School, Madurai. Your school is organising an 'Eco-Fiesta' to raise awareness about environmental issues. Draft a notice in about 50 words, inviting students to participate in various activities and setting up of food stalls. Include all the necessary details. Put your notice in a box.

4. Attempt any one of the two, (A) or (B), in about 50 words.

1x4=4

A. As the Cultural Secretary, Vignesh Kumar, of JKL School, Jamshedpur, draft an invitation for the Annual Music Festival, inviting Gajendra Hansda, an acclaimed local musician, to perform and judge the event. Provide the essential details in about 50 words.

OR

B. You are Bina Bedekar, currently residing at 45, Ashok Vihar, Nagpur. You have been invited to inaugurate a science exhibition at your alma mater, National Public School, Mumbai. Write a formal reply in about 50 words, accepting the invitation and expressing your gratitude.

5. Attempt any one of the two, (A) or (B), in 120-150 words

1x5=5

A. You are Pranab Chauhan, residing at 13-A, Gol Bazaar, Jaisalmer. Write a letter to the editor of *The Nation Today*, highlighting the need to assess sports talent at a young age by sports teachers and coaches to ensure that talent does not go unrecognised. Emphasise the importance of grooming young sportspersons to create a larger pool of talented athletes for the future. Draft the letter using your own ideas as well as the cues given.

- Spotting natural abilities during formative years.
- Building foundational skills early for long-term success.
- Instilling discipline, teamwork, and sportsmanship from a young age.
- Creating a larger pool of skilled athletes for the future.
- Building a strong sports culture and national pride.

OR

B. You are Lakshmi Kapur from 51/A, second floor, Shalimar Vihar, Delhi. You have come across the following advertisement in *The Urban Echo* for the post of a Junior Marketing Executive at a leading marketing firm. Write a letter expressing your interest in the position. Include your bio-data along with the application.

Join the Trendsetters Digital Agency

We are a leading marketing firm looking for dynamic individuals with:

- Strong communication skills
- An understanding of digital marketing
- Ability to work well in a team

Educational Requirements: Graduate in Marketing, Communication, or related field

Experience: Not mandatory, but prior exposure to digital marketing is an advantage

Interested candidates should send their applications with a resume.

Contact:

Trendsetters Digital Agency

Address: 12-B, Green Street,
New Delhi, 110001

1x5=5

6. Attempt any one of the two, (A) or (B), in 120-150 words

A. Digital communication tools have revolutionised the educational landscape. The introduction of online learning platforms, virtual classrooms, and interactive tools has made education more accessible and engaging. You are Nooran Sheikh. Write an article for the monthly magazine edition of *The Progressive Educator* and discuss the role of digital communication in education. Write the article using your own ideas as well as the cues given.

- Student engagement
- Accessibility of education
- Teachers and students' roles
- Learning outcomes

OR

B. The cultural festival in LMN School, Kochi, was held recently to celebrate the school's achievements. As the senior editorial board member, Devaki Fernandes, write this report for the school magazine detailing various aspects of the festival. Write the report using your own ideas as well as the cues given.

- Organisation and significance
- Performances and exhibition
- Participant engagement
- Overall success.

**SECTION C
LITERATURE**

(40 marks)

7. Read the following extracts and solve ANY ONE of the given two, (A) or (B). 1x6=6

A ... I saw my mother,
beside me,
doze, open mouthed, her face
ashen like that
of a corpse and realised with
pain
that she was as old as she
looked but soon
put that thought away, and
looked out at Young Trees sprinting, the merry children spilling
out of their homes...

(My Mother at Sixty-six)

I. What does the imagery of the 'ashen face' of the mother suggest about her physical condition? 1

II. Complete the following with the correct option. 1

The speaker's use of the word 'realised' suggests that her awareness was _____
(delayed / expected / sudden).

III. How does the phrase 'merry children spilling out of their homes' contribute to the tone of the passage? 1

IV. Complete the sentence by filling in the blank with a suitable phrase. 1

The primary theme highlighted in the extract is the _____, as the narrator reflects on her mother's frailty and aging.

V. What can be inferred about the emotional state of the speaker in the extract? 1

- a) Distracted by the liveliness of the surroundings
- b) Concerned about her mother's discomfort
- c) Overwhelmed by a sense of anguish
- d) Preoccupied with thoughts about life experiences

VI. All of the following are true for the extract EXCEPT – 1

- a) The comparison to a 'corpse' highlights the speaker's fear of losing her mother.
- b) The poet makes exclusive use of melancholic imagery in the given lines.
- c) The speaker's internal conflict creates a relatable portrayal of human relationships.
- d) The universality of themes makes the lines relevant to the readers.

OR

B When Aunt is dead, her terrified hands will lie
Still ringed with ordeals she was mastered by.
The tigers in the panel that she made
Will go on prancing, proud and unafraid (Aunt Jennifer's Tigers)

I What does the phrase 'terrified hands' suggest about Aunt's life? 1

II Complete the following suitably. 1

The tigers' proud and playful movements reflect _____.

III Examine briefly how the tigers in the panel contrast with Aunt's life experiences. 1

IV. Fill in the blank with the correct option from those given in the brackets. 1

The phrase 'still ringed' refers to both the literal _____ (shape of the embroidery panel / wedding band on her finger) and the figurative 'ring' of constraints and ordeals imposed by her marriage.

V. If a student were to interpret the word 'prancing' in a real-world context, which of the following would it best represent? 1

- a) An employee working under the pressure of deadlines.
- b) A soldier standing firm and ready for battle at the frontier.
- c) A child playing freely in a park, unburdened by responsibilities.
- d) A bird trapped in a cage, longing to be free and fly high.

VI. What does the poet imply about the art in the line 'The tigers in the panel that she made will go on prancing'? 1

- a) Art is a timeless expression that outlives its creator, continuing to embody their spirit and desires.
- b) The tigers symbolise Aunt Jennifer's fleeting empowerment, which will fade over time.
- c) The panel is a temporary escape for Aunt Jennifer, offering solace only during her lifetime.
- d) The permanence of the tigers in the panel contrasts with the transient nature of Aunt Jennifer's struggles.

8. **Read the following extracts and solve ANY ONE of the given two, (A) or (B).** 4x1=4

A. My three hundred dollars bought less than two hundred in old-style bills, but I didn't care; eggs were thirteen cents a dozen in 1894.

But I've never again found the corridor that leads to the third level at Grand Central Station, although I've tried often enough. Louisa was pretty worried when I told her all this, and didn't want me to look for the third level any more, and after a while I stopped; I went back to my stamps. But now we're both looking, every weekend...

(The Third Level)

I. What does Charley's indifference to the cost of old-style bills and his focus on the price of eggs in 1894 suggest about his view of the past? 1

II. Complete the sentence suitably. 1

Charley has been unsuccessful in finding the corridor to the third level despite ____.

III. Where is the irony in Louisa's reaction to Charley's search for the third level in this extract? 1

IV. Complete the following with a correct option based on the context in the extract. 1

The phrase 'I went back to my stamps' suggests ____.

- a) finding comfort in a hobby that is familiar
- b) choosing a new hobby to forget earlier pursuits
- c) attempting to engage together in a new hobby
- d) approaching a familiar hobby with enthusiasm

OR

B. Derry: What they think.

Mr Lamb: What do they think, then?

Derry: You think.... 'Here's a boy.' You look at me...and then you see my face and you think. 'That's bad. That's a terrible thing. That's the ugliest thing I ever saw.' You think, 'Poor boy.' But I'm not. Not poor. Underneath, you are afraid. Anybody would be. I am. When I look in the mirror, and see it, I'm afraid of me.

Mr Lamb: No, Not the whole of you. Not of you.

Derry: Yes!

[Pause] (On the Face of It)

I. What does Mr. Lamb mean when he says, "No. Not the whole of you. Not of you"? 1
II. What might Derry be thinking during the pause after he insists, "Yes!"? 1

Choose the most appropriate option:

- A. "Why doesn't he understand me?"
- B. "He's pretending to care like everyone else."
- C. "Maybe he really sees more than just my face."
- D. "I should leave. He doesn't get it."

III. Fill in the blank with a suitable word: 1

Mr. Lamb's response suggests that he sees Derry's face as only one _____ of who he is.

IV. What does this exchange reveal about the emotional distance Derry feels and Mr. Lamb's attempt to bridge it? 1

9. Read the following extracts and solve ANY ONE of the given two, (A) or (B). 1x6=6

A. She said this in such a friendly manner that the rattrap peddler must have felt confidence in her.

'It would never have occurred to me that you would bother with me yourself, miss,' he said. 'I will come at once.'

He accepted the fur coat, which the valet handed him with a deep bow, threw it over his rags, and followed the young lady out to the carriage, without granting the astonished blacksmiths so much as a glance.

But while he was riding up to the manor house he had evil forebodings.

"Why the devil did I take that fellow's money?" he thought. "Now I am sitting in the trap and will never get out of it."

(The Rattrap)

I. Which of the following best reflect the 'friendly manner' Edla exhibits toward the rattrap peddler as referred to in the extract? 1

1. Pay a compliment
2. Show kindness
3. Provide financial support
4. Be respectful
5. Speak in an excited tone

Select the most suitable option.

- A. 1 and 5
- B. 2 and 4
- C. 1, 2 and 3
- D. 3, 4 and 5

II. Fill in the blank with a correct option from those given in the brackets, based on the information in the extract. 1

The peddler threw the fur coat over his rags and followed Edla out to the carriage, _____ (enthusiastically / silently / reluctantly).

III. How did the peddler feel toward Edla after accepting the fur coat and making his statement? 1

- A. He decided to humour her gesture.
- B. He felt obligated to trust her kindness.
- C. He remained unsure about her true intentions.
- D. He recognised and appreciated her compassion.

IV. What might have been the most likely reason the blacksmiths were astonished when the peddler accepted the coat and left with Edla? 1

V. Justify that guilt was the primary cause of the peddler's sense of evil foreboding, based on the information in the extract? 1

VI. Complete the following suitably. 1

When the peddler says, "...I will never get out," his statement stems from his guilt over stealing 'that fellow's' money and his fear that _____.

OR

B. "She thinks money grows on trees, don't she, Dad?", said little Derek, hanging on the back of his father's chair.

Their mother sighed. Sophie watched her back stooped over the sink and wondered at the incongruity of the delicate bow which fastened her apron strings. The delicate-seeming bow and the crooked back.

The evening had already blacked in the windows and the small room was steamy from the stove and cluttered with the heavy-breathing man in his vest at the table and the dirty washing piled up in the corner. Sophie felt a tightening in her throat. She went to look for her brother Geoff.

(Going Places)

I. Fill in the blank by choosing the correct option from those given in the brackets. 1

The literal meaning conveyed via the phrase 'the evening had already blacked in the windows' is the _____ (arrival of night / shadow over ambitions).

II. What was mother most likely thinking when she sighed? 1

1. "Life would have been different if money did grow on trees!"
2. "I wish he would stop troubling my dear Sophie."
3. "We can only wish; we've never had enough anyway."
4. "I'm too tired to respond to such comments anymore."
5. "Our struggles will never end; no matter what Sophie dreams of."

Select the most suitable option.

- A. 1, 3 and 5
- B. 2, 4 and 5
- C. 1 and 4
- D. 2 and 3

III. The delicate bow on Sophie's mother's apron and her crooked back highlights the theme of _____. 1

- A. appearance vs. reality
- B. resilience through hardship
- C. the fragility of youth
- D. the complexity of familial love

IV. The line from the extract that correctly captures Sophie's emotional response to the contrast between her dreams and the limitations of her current circumstances is _____ . 1

V. What does the writer emphasise by associating the term 'cluttered' with 'heavy breathing'? 1

VI. How does the setting of the room contribute to the mood of the extract? 1

10. **Answer any five of the following six questions in 40 50 words each :** 5x2=10

- I. What role does the French language played in ‘The Last Lesson’, in the context of the narrator’s feelings towards it? 2
- II. What lesson can individuals learn from Douglas’s experience in overcoming his fear of water? 2
(Deep Water)
- III. Based on what Keats’ suggests in ‘A Thing of Beauty,’ how can recognising the lasting value of beauty help someone in the real world cope with challenges or difficulties? 2
- IV. What does the reference to fishermen not harming whales and the man gathering salt looking at his hurt hands signify in the poem? 2
(Keeping Quiet)
- V. How does Rudyard Kipling’s refusal to be interviewed point towards the intrusive and unwelcome nature of interviews? 2
(The Interview I & II)
- VI. What is the significance of a narrator in ‘Lost Spring’ as opposed to a plain narrative? 2

11. **Answer any two of the following three questions in 40 -50 words each :** 2x2=4

- I. How can participating in educational programmes like ‘Students on Ice’, which take students to places like Antarctica, help raise awareness about the impact of geological changes and environmental issues? 2
(Journey to the End of the Earth)
- II. What does Zitkala-Sa’s description of being ‘tossed about in the air like a wooden puppet’ reveal about her feelings of powerlessness and cultural displacement? 2
(The Memories of Childhood: The Cutting of My Long Hair)
- III. What does Derry’s remark, “Think, you might have been blinded, or born deaf, or have to live in a wheelchair...,” reveal about his perspective on how people console others? 2
(On the Face of It)

12. **Answer any one of the following two questions, in about 120-150 words.** 1x5=5

A How do ‘Indigo’ by Louis Fischer and ‘The Roadside Stand’ by Robert Frost, highlight the theme of exploitation, and what similarities do they reveal about the plight of marginalised communities?

OR

B How can the character of the office boy in ‘Poets and Pancakes,’ who harbours dreams, be compared to Sophie from ‘Going Places,’ who is quite aspirational? Consider their ambitions and the obstacles they face in their respective

environments.

13. Answer any one of the following two questions, in about 120-150 words 1x5=5

A Justify how Sadao's character arc is more central to the moral dilemma in the 'The Enemy' as opposed to Hana's.

OR

B Analyse how the narrative technique used in 'The Tiger King', enhances the impact of the story on the reader.

MATHEMATICS – Code No. 041
SAMPLE QUESTION PAPER
CLASS - XII (2025-26)

Maximum Marks: 80

Time: 3 hours

General Instructions:

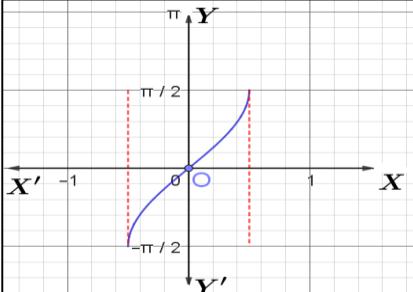
Read the following instructions very carefully and strictly follow them:

1. This Question paper contains 38 questions. All questions are compulsory.
2. This Question paper is divided into five Sections - A, B, C, D and E.
3. In Section A, Questions no. 1 to 18 are multiple choice questions (MCQs) with only one correct option and Questions no. 19 and 20 are Assertion-Reason based questions of 1 mark each.
4. In Section B, Questions no. 21 to 25 are Very Short Answer (VSA)-type questions, carrying 2 marks each.
5. In Section C, Questions no. 26 to 31 are Short Answer (SA)-type questions, carrying 3 marks each.
6. In Section D, Questions no. 32 to 35 are Long Answer (LA)-type questions, carrying 5 marks each.
7. In Section E, Questions no. 36 to 38 are Case study-based questions, carrying 4 marks each.
8. 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 one subpart each in 2 questions of Section E.
9. Use of calculator is not allowed.

SECTION-A

This section comprises of multiple choice questions (MCQs) of 1 mark each.

Select the correct option (Question 1 - Question 18)

Q.No.	Questions	Marks
1.	<p>Identify the function shown in the graph</p>  <p>(A) $\sin^{-1} x$ (B) $\sin^{-1}(2x)$ (C) $\sin^{-1}\left(\frac{x}{2}\right)$ (D) $2 \sin^{-1} x$</p> <p>For Visually Impaired:</p> <p>1. Inverse Trigonometric Function, whose domain is $\left[-\frac{1}{3}, \frac{1}{3}\right]$, is ...</p> <p>(A) $\cos^{-1} x$ (B) $\cos^{-1}\left(\frac{x}{3}\right)$ (C) $\cos^{-1}(3x)$ (D) $3 \cos^{-1} x$</p>	1

2.	If for three matrices $A = [a_{ij}]_{m \times 4}$, $B = [b_{ij}]_{n \times 3}$ and $C = [c_{ij}]_{p \times q}$ products AB and AC both are defined and are square matrices of same order, then value of m, n, p and q are: (A) $m = q = 3$ and $n = p = 4$ (B) $m = 2, q = 3$ and $n = p = 4$ (C) $m = q = 4$ and $n = p = 3$ (D) $m = 4, p = 2$ and $n = q = 3$	1
3.	If the matrix $A = \begin{bmatrix} 0 & r & -2 \\ 3 & p & t \\ q & -4 & 0 \end{bmatrix}$ is skew-symmetric, then value of $\frac{q+t}{p+r}$ is.... (A) -2 (B) 0 (C) 1 (D) 2	1
4.	If A is a square matrix of order 4 and $ \text{adj } A = 27$, then $A (\text{adj } A)$ is equal to (A) 3 (B) 9 (C) $3 I$ (D) $9 I$	1
5.	The inverse of the matrix $\begin{bmatrix} 3 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 5 \end{bmatrix}$ is... (A) $\begin{bmatrix} 0 & 0 & 3 \\ 0 & 2 & 0 \\ 5 & 0 & 0 \end{bmatrix}$ (B) $\begin{bmatrix} \frac{1}{3} & 0 & 0 \\ 0 & \frac{1}{2} & 0 \\ 0 & 0 & \frac{1}{5} \end{bmatrix}$ (C) $\begin{bmatrix} -\frac{1}{3} & 0 & 0 \\ 0 & -\frac{1}{2} & 0 \\ 0 & 0 & -\frac{1}{5} \end{bmatrix}$ (D) $\begin{bmatrix} -3 & 0 & 0 \\ 0 & -2 & 0 \\ 0 & 0 & -5 \end{bmatrix}$	1
6.	Value of the determinant $\begin{vmatrix} \cos 67^\circ & \sin 67^\circ \\ \sin 23^\circ & \cos 23^\circ \end{vmatrix}$ is (A) 0 (B) $\frac{1}{2}$ (C) $\frac{\sqrt{3}}{2}$ (D) 1	1
7.	If a function defined by $f(x) = \begin{cases} kx + 1, & x \leq \pi \\ \cos x, & x > \pi \end{cases}$ is continuous at $x = \pi$, then the value of k is (A) π (B) $-\frac{1}{\pi}$ (C) 0 (D) $-\frac{2}{\pi}$	1
8.	If $f(x) = x \tan^{-1} x$, then $f'(1)$ is equal to (A) $\frac{\pi}{4} - \frac{1}{2}$ (B) $\frac{\pi}{4} + \frac{1}{2}$ (C) $-\frac{\pi}{4} - \frac{1}{2}$ (D) $-\frac{\pi}{4} + \frac{1}{2}$	1
9.	A function $f(x) = 10 - x - 2x^2$ is increasing on the interval (A) $(-\infty, -\frac{1}{4}]$ (B) $(-\infty, \frac{1}{4})$ (C) $[-\frac{1}{4}, \infty)$ (D) $[-\frac{1}{4}, \frac{1}{4}]$	1
10.	The solution of the differential equation $xdx + ydy = 0$ represents a family of (A) straight lines (B) parabolas (C) Circles (D) Ellipses	1

11.	If $f(a+b-x) = f(x)$, then $\int_a^b x f(x) dx$ is equal to (A) $\frac{a+b}{2} \int_a^b f(b-x) dx$ (B) $\frac{a+b}{2} \int_a^b f(a-x) dx$ (C) $\frac{b-a}{2} \int_a^b f(x) dx$ (D) $\frac{a+b}{2} \int_a^b f(x) dx$	1
12.	If $\int x^3 \sin^4(x^4) \cos(x^4) dx = a \sin^5(x^4) + C$, then a is equal to (A) $-\frac{1}{10}$ (B) $\frac{1}{20}$ (C) $\frac{1}{4}$ (D) $\frac{1}{5}$	1
13.	A bird flies through a distance in a straight line given by the vector $\hat{i} + 2\hat{j} + \hat{k}$. A man standing beside a straight metro rail track given by $\vec{r} = (3 + \lambda)\hat{i} + (2\lambda - 1)\hat{j} + 3\lambda\hat{k}$ is observing the bird. The projected length of its flight on the metro track is (A) $\frac{6}{\sqrt{14}}$ units (B) $\frac{14}{\sqrt{6}}$ units (C) $\frac{8}{\sqrt{14}}$ units (D) $\frac{5}{\sqrt{6}}$ units	1
14.	The distance of the point with position vector $3\hat{i} + 4\hat{j} + 5\hat{k}$ from the y-axis is (A) 4 units (B) $\sqrt{34}$ units (C) 5 units (D) $5\sqrt{2}$ units	1
15.	If $\vec{a} = 3\hat{i} + 2\hat{j} + 4\hat{k}$, $\vec{b} = \hat{i} + \hat{j} - 3\hat{k}$ and $\vec{c} = 6\hat{i} - \hat{j} + 2\hat{k}$ are three given vectors, then $(2\vec{a} \cdot \hat{i})\hat{i} - (\vec{b} \cdot \hat{j})\hat{j} + (\vec{c} \cdot \hat{k})\hat{k}$ is same as the vector (A) \vec{a} (B) $\vec{b} + \vec{c}$ (C) $\vec{a} - \vec{b}$ (D) \vec{c}	1
16.	A student of class XII studying Mathematics comes across an incomplete question in a book. Maximise $Z = 3x + 2y + 1$ Subject to the constraints $x \geq 0, y \geq 0, 3x + 4y \leq 12$, He/ She notices the below shown graph for the said LPP problem, and finds that a constraint is missing in it: Help him/her choose the required constraint from the graph.	1

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16.	<p>For Visually Impaired:</p> <p>If $Z = ax + by + c$, where $a, b, c > 0$, attains its maximum value at two of its corner points $(4,0)$ and $(0,3)$ of the feasible region determined by the system of linear inequalities, then</p> <p>(A) $4a = 3b$ (B) $3a = 4b$ (C) $4a + c = 3b$ (D) $3a + c = 4b$</p>	
17.	<p>The feasible region of a linear programming problem is bounded but the objective function attains its minimum value at more than one point. One of the points is $(5,0)$.</p>	1
	<p>Then one of the other possible points at which the objective function attains its minimum value is</p> <p>(A) $(2,9)$ (B) $(6,6)$ (C) $(4,7)$ (D) $(0,0)$</p> <p>For Visually Impaired:</p> <p>The graph of the inequality $3x + 5y < 10$ is the</p> <p>(A) Entire XY –plane (B) Open Half plane that doesn't contain origin (C) Open Half plane that contains origin, but not the points of the line $3x + 5y = 10$ (D) Half plane that contains origin and the points of the line $3x + 5y = 10$</p>	
18.	<p>A person observed the first 4 digits of your 6-digit PIN. What is the probability that the person can guess your PIN?</p> <p>(A) $\frac{1}{81}$ (B) $\frac{1}{100}$ (C) $\frac{1}{90}$ (D) 1</p>	1

ASSERTION-REASON BASED QUESTIONS

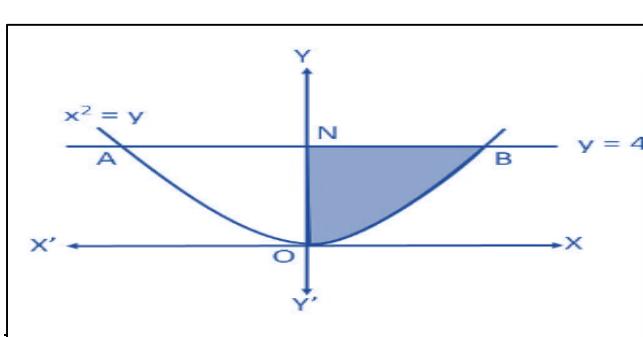
(Question numbers 19 and 20 are Assertion-Reason based questions carrying 1 mark each. Two statements are given, one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer from the options (A), (B), (C) and (D) as given below.)

- (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.

19.	Assertion (A): Value of the expression $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) + \tan^{-1} 1 - \sec^{-1}(\sqrt{2})$ is $\frac{\pi}{4}$. Reason (R): Principal value branch of $\sin^{-1} x$ is $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ and that of $\sec^{-1} x$ is $[0, \pi] - \left\{\frac{\pi}{2}\right\}$.	1
20.	Assertion(A): Given two non-zero vectors \vec{a} and \vec{b} . If \vec{r} is another non-zero vector such that $\vec{r} \times (\vec{a} + \vec{b}) = \vec{0}$. Then \vec{r} is perpendicular to $\vec{a} \times \vec{b}$. Reason (R): The vector $(\vec{a} + \vec{b})$ is perpendicular to the plane of \vec{a} and \vec{b}	1

SECTION B

This section comprises of 5 very short answer (VSA) type questions of 2 marks each.

21A	Evaluate $\tan\left(\tan^{-1}(-1) + \frac{\pi}{3}\right)$	2
	OR	
21B	Find the domain of $\cos^{-1}(3x - 2)$	
22	If $y = \log \tan\left(\frac{\pi}{4} + \frac{x}{2}\right)$, then prove that $\frac{dy}{dx} - \sec x = 0$	2
23A	Find: $\int \frac{(x-3)}{(x-1)^3} e^x dx$	2
	OR	
23B	Find out the area of shaded region in the enclosed figure.	
		

23 B	<p>For Visually Impaired:</p> <p>Find out the area of the region enclosed by the curve $y^2 = x$, $x = 3$ and x-axis in the first quadrant.</p>	
24.	If $f(x + y) = f(x)f(y)$ for all $x, y \in \mathbb{R}$ and $f(5) = 2$, $f'(0) = 3$, then using the definition of derivatives, find $f'(5)$.	2
25.	The two vectors $\hat{i} + \hat{j} + \hat{k}$ and $3\hat{i} - \hat{j} + 3\hat{k}$ represent the two sides OA and OB , respectively of a ΔOAB , where O is the origin. The point P lies on AB such that OP is a median. Find the area of the parallelogram formed by the two adjacent sides as OA and OP .	2
SECTION C		
This section comprises of 6 short answer (SA) type questions of 3 marks each.		
26A.	If $x^y = e^{x-y}$ prove that $\frac{dy}{dx} = \frac{\log x}{(\log(xe))^2}$ and hence find its value at $x = e$.	3
OR		
26B.	If $x = a(\theta - \sin \theta)$, $y = a(1 - \cos \theta)$ find $\frac{d^2y}{dx^2}$.	
27	A spherical ball of ice melts in such a way that the rate at which its volume decreases at any instant is directly proportional to its surface area. Prove that the radius of the ice ball decreases at a constant rate.	3
28A	Sketch the graph $y = x + 1 $. Evaluate $\int_{-4}^2 x + 1 dx$. What does the value of this integral represent on the graph?	3
OR		
28B	Using integration find the area of the region $\{(x, y) : x^2 - 4y \leq 0, y - x \leq 0\}$	
For Visually Impaired:		
28A	Define the function $y = x + 1 $. Evaluate $\int_{-4}^2 x + 1 dx$. What does the value of this integral represent?	
OR		
28B	Using integration find the area enclosed within the curve: $25x^2 + 16y^2 = 400$	
29A	<p>Find the distance of the point $(2, -1, 3)$ from the line</p> $\vec{r} = (2\hat{i} - \hat{j} + 2\hat{k}) + \mu(3\hat{i} + 6\hat{j} + 2\hat{k})$ <p>measured parallel to the z-axis.</p>	3
OR		
29B	Find the point of intersection of the line $\vec{r} = (3\hat{i} + \hat{k}) + \mu(\hat{i} + \hat{j} + \hat{k})$ and the line through $(2, -1, 1)$ parallel to the z-axis. How far is this point from the z-axis?	

30.	<p>Solve graphically:</p> <p>Maximise $Z = 2x + y$ subject to</p> $x + y \leq 1200$ $x + y \geq 600$ $y \leq \frac{x}{2}$ $x \geq 0, y \geq 0.$	3
30	<p>For Visually Impaired:</p> <p>The objective function $Z = 3x + 2y$ of a linear programming problem under some constraints is to be maximized and minimized. The corner points of the feasible region are $A(600,0)$, $B(1200,0)$, $C(800,400)$ and $D(400,200)$. Find the point at which Z is maximum and the point at which Z is minimum. Also, find the corresponding maximum and minimum values of Z.)</p>	
31.	<p>Two students Mehul and Rashi are seeking admission in a college. The probability that Mehul is selected is 0.4 and the probability of selection of exactly one of the them is 0.5. Chances of selection of them is independent of each other. Find the chances of selection of Rashi. Also find the probability of selection of at least one of them.</p>	3
SECTION D		
This section comprises of 4 long answer (LA) type questions of 5 marks each		
32.	<p>For two matrices $A = \begin{bmatrix} 3 & -6 & -1 \\ 2 & -5 & -1 \\ -2 & 4 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -2 & -1 \\ 0 & -1 & -1 \\ 2 & 0 & 3 \end{bmatrix}$, find the product AB and hence solve the system of equations:</p> $3x - 6y - z = 3$ $2x - 5y - z + 2 = 0$ $-2x + 4y + z = 5$	5
33A	<p>Evaluate: $\int_0^1 \frac{\log(1+x)}{1+x^2} dx$</p> <p>OR</p>	5
33B	<p>Find $\int \frac{(3 \sin \theta - 2) \cos \theta}{5 - \cos^2 \theta - 4 \sin \theta} d\theta$</p>	
34A	<p>Solve the differential equation: $y + \frac{d}{dx}(xy) = x(\sin x + x)$</p> <p>OR</p>	5
34B	<p>Find the particular solution of the differential equation:</p> $2y e^{x/y} dx + (y - 2x e^{x/y}) dy = 0$ given that $y(0) = 1$	

35.	The two lines $\frac{x-1}{3} = -y, z+1 = 0$ and $\frac{-x}{2} = \frac{y+1}{2} = z+2$ intersect at a point whose y-coordinate is 1. Find the co-ordinates of their point of intersection. Find the vector equation of a line perpendicular to both the given lines and passing through this point of intersection.	5
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SECTION- E

This section comprises of 3 case-study/passage-based questions of 4 marks each with subparts. The first two case study questions have three subparts (I), (II), (III) of marks 1, 1, 2 respectively. The third case study question has two subparts of 2 marks each

36.	<p>Case Study -1</p> <p>A city's traffic management department is planning to optimize traffic flow by analyzing the connectivity between various traffic signals. The city has five major spots labelled <i>A, B, C, D, and E</i>.</p>  <p>The department has collected the following data regarding one-way traffic flow between spots:</p> <ol style="list-style-type: none"> 1. Traffic flows from <i>A</i> to <i>B</i>, <i>A</i> to <i>C</i>, and <i>A</i> to <i>D</i>. 2. Traffic flows from <i>B</i> to <i>C</i> and <i>B</i> to <i>E</i>. 3. Traffic flows from <i>C</i> to <i>E</i>. 4. Traffic flows from <i>D</i> to <i>E</i> and <i>D</i> to <i>C</i>. <p>The department wants to represent and analyze this data using relations and functions. Use the given data to answer the following questions:</p> <ol style="list-style-type: none"> I. Is the traffic flow reflexive? Justify. [1] II. Is the traffic flow transitive? Justify. [1] <p>III A. Represent the relation describing the traffic flow as a set of ordered pairs. Also state the domain and range of the relation.</p> <p style="text-align: center;">OR</p> <p>III B. Does the traffic flow represent a function? Justify your answer- [2]</p>	4
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37.	<p>Case Study -2</p> <p>LED bulbs are energy-efficient because they use significantly less electricity than traditional bulbs while producing the same amount of light. They convert more energy into light rather than heat, reducing waste. Additionally, their long lifespan means fewer replacements, saving resources and money over time.</p> <p>A company manufactures a new type of energy-efficient LED bulb. The cost of production and the revenue generated by selling x bulbs (in an hour) are modelled as</p> $C(x) = 0.5x^2 - 10x + 150 \text{ and } R(x) = -0.3x^2 + 20x \text{ respectively, where } C(x) \text{ and } R(x) \text{ are both in ₹.}$  <p>To maximize the profit, the company needs to analyze these functions using calculus. Use the given models to answer the following questions:</p> <ol style="list-style-type: none"> Derive the profit function $P(x)$ [1] Find the critical points of $P(x)$. [1] A. Determine whether the critical points correspond to a maximum or a minimum profit by using the second derivative test. <p style="text-align: center;">OR</p> <ol style="list-style-type: none"> B. Identify the possible practical value of x (i.e., the number of bulbs that can realistically be produced and sold) that can maximize the profit, if the resources available and the expenditure on machines allows to produce minimum 10 but not more than 18 bulbs per hour. Also calculate the maximum profit. [2] 	4
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38.	<p>Case Study -3</p> <p>Excessive use of screens can result in vision problems, obesity, sleep disorders, anxiety, low retention problems and can impede social and emotional comprehension and expression. It is essential to be mindful of the amount of time we spend on screens and to reduce our screen-time by taking regular breaks, setting time limits, and engaging in non-screen-based activities.</p>  <p>In a class of students of the age group 14 to 17, the students were categorised into three groups according to a feedback form filled by them. The first group constituted of the students who spent more than 4 hours per day on the mobile screen or the gaming screens, while the second group spent 2 to 4 hours /day on the same activities. The third group spent less than 2 hours /day on the same. The first group with the high screen time is 60% of all the students, whereas the second group with moderate screen time is 30% and the third group with low screen time is only 10% of the total number of students. It was observed that 80% students of first group faced severe anxiety and low retention issues, with 70% of second group, and 30% of third group having the same symptoms.</p> <ol style="list-style-type: none"> What is the total percentage of students who suffer from anxiety and low retention issues in the class? [2] A student is selected at random, and he is found to suffer from anxiety and low retention issues. What is the probability that he/she spends screen time more than 4 hours per day? [2] 	4
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PHYSICS – Code No. 042
SAMPLE QUESTION PAPER
CLASS – XII (2025 – 26)

Time Allowed: 3 hours

Maximum Marks: 70

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.
- (3) All the sections are compulsory.
- (4) **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**.
- (5) There is no overall choice. However, an internal choice has been provided in two question in Section B, one question in Section C and all three questions in Section E. You have to attempt only one of the choices in such questions.
- (6) Use of calculators is not allowed.
- (7) You may use the following values of physical constants where ever necessary
 - i. $c = 3 \times 10^8 \text{ m/s}$
 - ii. $m_e = 9.1 \times 10^{-31} \text{ kg}$
 - iii. $m_p = 1.7 \times 10^{-27} \text{ kg}$
 - iv. $e = 1.6 \times 10^{-19} \text{ C}$
 - v. $\mu_0 = 4\pi \times 10^{-7} \text{ T m A}^{-1}$
 - vi. $h = 6.63 \times 10^{-34} \text{ J s}$
 - vii. $\epsilon_0 = 8.854 \times 10^{-12} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$
 - viii. Avogadro's number = 6.023×10^{23} per gram mole

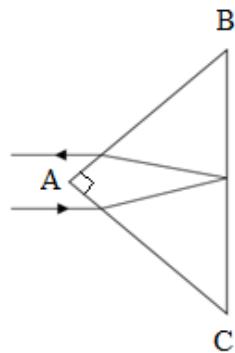
SECTION A

Q.No.	Question	Marks
1.	<p>If a charged hollow sphere and a solid sphere of aluminum and copper of equal radii are in electrostatic equilibrium, then which of the following statements is true?</p> <p>(A) Both the spheres are having equal charges. (B) The hollow sphere will have more charge than solid sphere at its surface. (C) The aluminum sphere will have more charge on its surface than copper sphere. (D) If hollow sphere is also made up of aluminum then it will have more charge.</p>	1

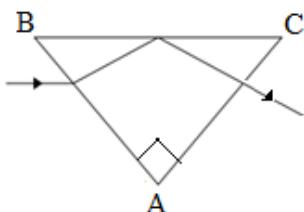
* Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current session i.e. 2025-26.

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(C)



(D)

**For VI-Candidates**

Light passes from a certain medium into air. The critical angle of the given medium is Θ , which of the following expressions gives the speed of light in the given medium? Where c is the speed of light in air.

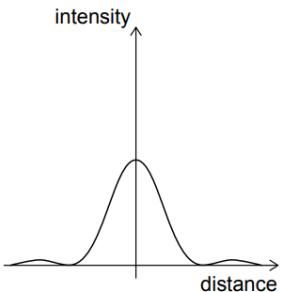
(A) $\frac{1}{c \sin \theta}$

(B) $\frac{\sin \theta}{c}$

(C) $\frac{c}{\sin \theta}$

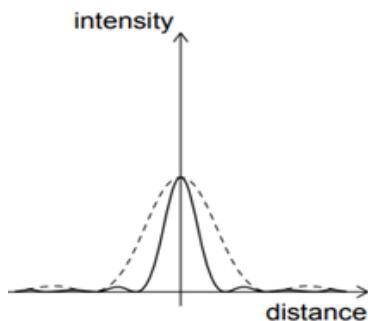
(D) $c \sin \theta$

6. The light from a monochromatic source is incident on a single slit and the resulting diffraction pattern is viewed on a screen. The graph shows the variation of the intensity with the distance on the screen.

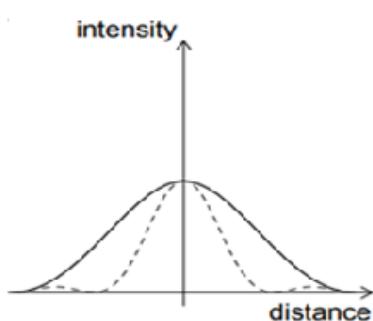


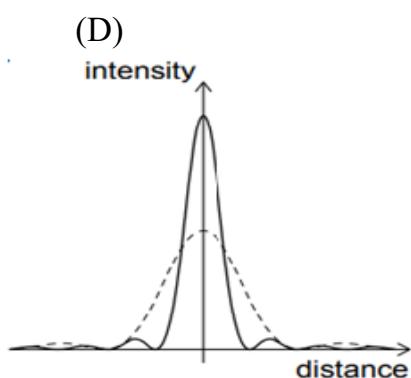
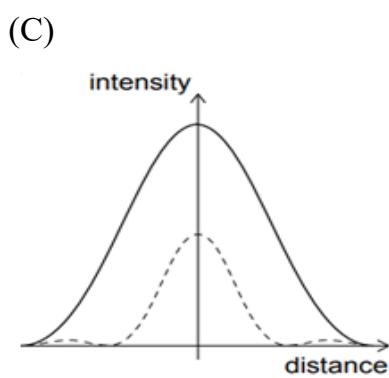
The width of slit is increased keeping the intensity of the source the same. Which of the following graphs is correct? (The original curve is shown with a dashed line.)

(A)



(B)



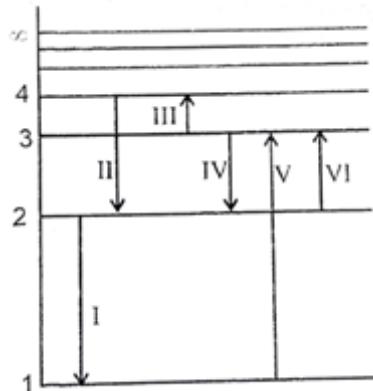


For VI-Candidates

The phenomenon of superposition of two waves, resulting in redistribution of energy is known as.....

- (A) diffraction
- (B) interference
- (C) reflection
- (D) refraction

7. Which of the following transitions corresponds to the emission of the radiation of the maximum wavelength?



(for V.I. Candidates)

Which of the following transitions corresponds to the emission of the radiation of the maximum wavelength?

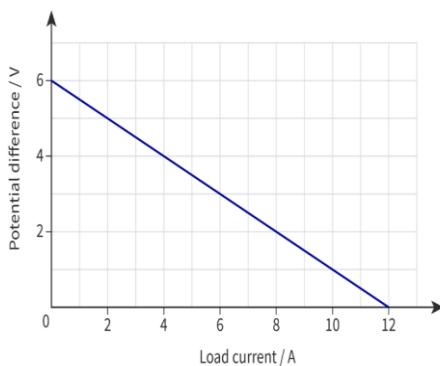
I	From 4 th orbit to 2 nd orbit.
II	From 2 nd orbit to 1 st orbit.
III	From 3 rd orbit to 4 th orbit.
IV	From 3 rd orbit to 2 nd orbit.
V	From 1 st orbit to 3 rd orbit.
VI	From 2 nd orbit to 3 rd orbit.

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	<p>(A) The deflection of the magnetic needle at P and Q will be in the same direction.</p> <p>(B) The deflection of the magnetic needle at P and Q will be in the opposite directions.</p> <p>(C) The deflection of the magnetic needle at P and Q will be perpendicular to each other.</p> <p>(D) The deflection of the magnetic needle at P and Q will be inclined at 45° with respect to each other.</p>	
	<p>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.</p> <p>(A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.</p> <p>(B) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.</p> <p>(C) Assertion is true but Reason is false.</p> <p>(D) Both Assertion and Reason are false.</p>	
13.	<p>Assertion (A): Total energy of an electron in hydrogen atom is negative.</p> <p>Reason (R): The centripetal force is provided by electrostatic force.</p>	1
14.	<p>Assertion (A): The critical angle of light passing from glass to air is minimum for violet colour.</p> <p>Reason (R): The wavelength of blue light is greater than the light of other colours.</p>	1
15.	<p>Assertion (A): Two light sources emitting waves of similar wavelengths are coherent.</p> <p>Reason (R): Two light sources emitting waves having zero or constant phase difference are known as coherent sources.</p>	1
16.	<p>Assertion (A): For three point charges to be in equilibrium, they must be collinear.</p> <p>Reason(R): One of the three charges must have different polarity than rest of the two.</p>	1
SECTION B		
17.	The amplitude of the magnetic field of a plane electromagnetic wave propagating along positive X axis in vacuum is $510 \text{ nT} \hat{k}$ and its angular frequency is $60 \times 10^6 \text{ rad/sec}$. Write the expression for the electric field (\vec{E}).	2
18.	The following graph shows the potential difference across the terminals of a cell against its load current.	2

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Find,

- (I) the emf of the cell and
- (II) the internal resistance of the cell.

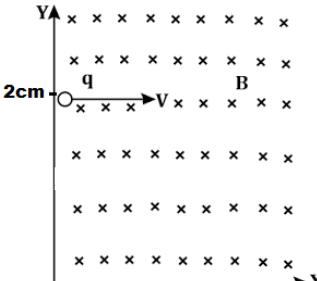
For VI candidates

Find the relation between internal resistance, emf, external resistance and the total current in the circuit ?

19.	A charge q is placed inside a sphere of radius 'a' filled with water and another charge $2q$ is placed inside cube of side '2a' which is vacuumed inside. Find the ratio of the flux linked with the sphere to that linked with the cube. (Take relative permittivity of water as 80)	2
20(I)	Write an expression for the magnetic force per unit length between two parallel thin current carrying wires. Hence define one ampere.	2
	OR	
20(II)	Draw a diagram representing the behaviour of magnetic field lines for a (A) diamagnetic & (B) paramagnetic substance.	2
	<u>For VI-Candidates</u> State Gauss's law of magnetism? Hence find the magnetic flux linked with the sphere enclosing a current carrying solenoid?	
21(I)	How does the impact parameter affect the trajectory of a α – particles scattered by a heavy nucleus? What is the value of impact parameter for head on collision of α – particles with the nucleus?	2
	OR	
21(II)	Plot a graph showing variation of de-Broglie wavelength λ versus $\frac{1}{\sqrt{V}}$, where V is accelerating potential for a particle of mass m and charge q . Obtain the slope of this graph.	

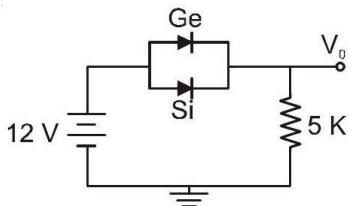
SECTION C

22.	With the help of circuit diagram explain working of the full wave rectifier.	3
23.	<p>(I) The current I_1 in a wire is getting divided in two wires with currents I_2 and I_3 at a junction in a circuit. The currents in the three wires are related by $I_1 = I_2 + I_3$.</p> <p>(A) State the fundamental law from which this relation is derived.</p> <p>(B) Explain the validation of law of conservation of energy in Kirchhoff's voltage law?</p> <p>(II) How the balancing condition gets affected if you are interchanging the galvanometer and the cell in the Wheat stone bridge?</p>	3
24.	<p>A fast-moving neutron collides with the nucleus of Plutonium (Pu), thereby producing Xenon (Xe) and Zirconium (Zr) along with neutrons.</p> <p>(I) Write the nuclear fission reaction.</p> <p>(II) Find the energy released in the above nuclear reaction.</p> <p>Given atomic masses:</p> <p>$m(^{239}_{94}Pu) = 239.052157u$,</p> <p>$m(^{103}_{40}Zr) = 102.926597u$,</p> <p>$m(^{134}_{54}Xe) = 133.905040u$ &</p> <p>$m(^1_0n) = 1.00866u$.</p>	3
25.	<p>A compound microscope consists of an objective lens of focal length 0.82 cm and an eyepiece lens of focal length 2.9 cm. An object is placed 0.91 cm from the objective lens. The image is formed at the near point (25 cm) from the eye.</p> <p>(I) Calculate that the angular magnification of the microscope.</p> <p>(II) Draw the ray diagram of compound microscope in normal adjustment.</p>	3
26.	<p>Draw the reflected wave front for a plane wave front incident on a plane reflecting surface. Hence verify the laws of reflection using Huygen's principle.</p> <p><u>For VI Candidates</u></p> <p>(I) Define wave front?</p> <p>(II) Define wavelet?</p> <p>(III) What will be the shape of the wave front intercepted by a large reflecting type telescope on earth, due to a star far-away from our solar system?</p>	3

27(I)	<p>If a point sized object having charge 1C and mass 1g is projected with velocity of $2\hat{i}$ m/s from a point (0,2cm,0) in the region of magnetic field $-0.1\hat{k}$ T which spreads in the first quadrant.</p>  <p>(A) What will be the shape of the path followed by the given charged particle? (B) At what point it will cross the X-axis? (C) What will be the kinetic energy of particle when it will enter in the fourth quadrant?</p> <p style="text-align: center;">OR</p>	3
27(II)	<p>A solenoid has a core of material with relative permeability 200. The windings of the solenoid are insulated from the core and carry a current of 1A. If the number of turns is 2000 per metre, calculate</p> <p>(A) magnetic intensity, (B) magnetic field & (C) magnetisation</p>	3
28.	<p>A conducting coil of 50 turns and area $\frac{5}{\pi}$ cm² is rotating along the axis of solenoid of length 50cm and 2000 turns, carrying current of 5 A. What will be the value of maximum emf generated?</p>	3
SECTION - D		
29	<p>When an external voltage is applied across a semiconductor diode such that p-side is connected to the positive terminal of the battery and n-side to the negative terminal it is said to be forward biased. The applied voltage mostly drops across the depletion region and the voltage drop across the p-side and n-side of the junction is negligible. When an external voltage is applied across the diode such that n-side is positive and p-side is negative, it is said to be reverse biased. The applied voltage mostly drops across the depletion region.</p>	1 Mark each

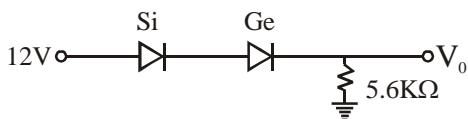
* Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current session i.e. 2025-26.

(I) Ge and Si diodes start conducting at 0.3 V and 0.7 V respectively. In the following figure if Ge diode connection are reversed, the value of V_0 changes by (assume that the Ge diode has large breakdown voltage)



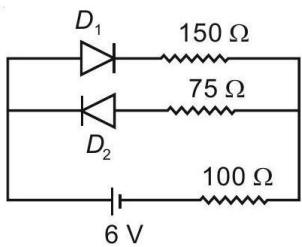
(A) 0.2 V (B) 0.4 V
 (C) 0.6 V (D) 0.8 V

(II.) The value of V_0 and I_d for the network are :



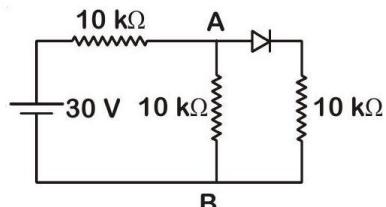
(A) 13 V, 2.32mA (B) 11.7 V, 2.08mA
 (C) 11.3V, 2.01mA (D) 11V, 1.96mA

(III.) The circuit shown below contains two ideal diodes, each with a forward resistance of 50Ω . If the battery voltage is 6 V, the current through the 100Ω resistance (in amperes) is

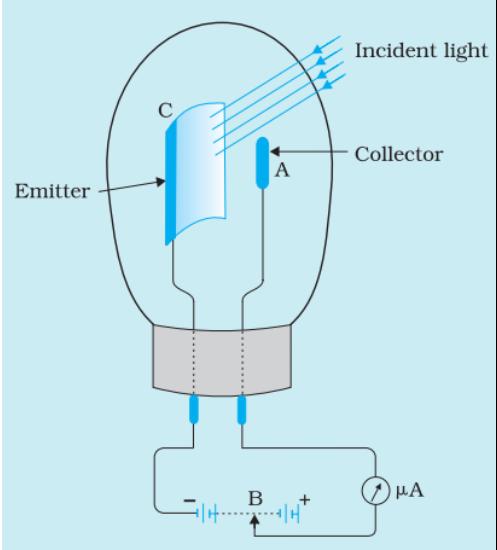


(A) 0.036 (B) 0.020
 (C) 0.030 (D) 0.027

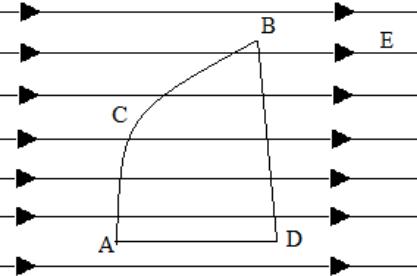
(IV) In the figure, potential difference between A and B is



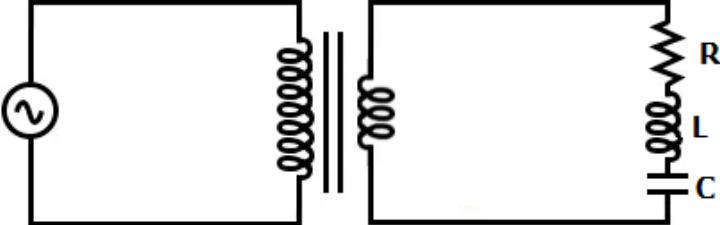
(A) Zero (B) 5 V
 (C) 10 V (D) 15 V

30.	<p>Photoelectric effect is phenomenon of the ejection of electrons when the radiation of suitable frequency is made to fall on the surface of a metal. When light of suitable wavelength falls on the emitter C given in the diagram, the photoelectrons are emitted. These photoelectrons are drawn to the collector A. The photoelectric current of the order of a few microamperes can be normally obtained from the device given in figure. The device given converts a change in intensity of illumination into a change in photocurrent. This current can be used to operate control systems and in light measuring devices. The devices are made up of metals with low ionization enthalpies, for example platinum whose work function is 6.35 eV.</p>	
	(I) If infrared radiation of 3×10^{11} Hz is used as incident radiation, determine the reading of microammeter? Justify mathematically.	2
	(II) In the given diagram, if terminal B is shifted towards the left then how will it affect the reading of the microammeter?	1
	<p>(for V.I. candidates)</p> <p>(II) If the supplied voltage is decreased, then what will be effect on the reading of the microammeter?</p>	
	<p>(III) Plot a graph showing this variation in reading of micrometre on shifting the terminal B towards the right.</p> <p>(for V.I. candidates)</p> <p>(III) If the intensity of incident radiation is doubled, by what factor will the kinetic energy change?</p>	1
SECTION E		
31(I)	<p>(A) A dielectric slab of thickness t, is introduced between the plates of parallel plate capacitor of area A and separation d (where $t < d$). Find an expression for the capacitance with the dielectric slab.</p> <p>(B) A copper sphere of capacitor C is dropped in ocean. Will the capacitance of the sphere increase, decrease or remain same? Justify.</p> <p>(C) A capacitor is connected across a source of potential difference V and then the separation 'd' between the plates is increased using insulating stick. Plot 'V' vs 'd' graph for the given capacitor.</p>	2+2+1

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	<p><u>For VI Candidates</u></p> <p>(C) A capacitor is connected across potential difference V and is then separation between plates 'd' is increase using insulating stick. Will the energy stored in capacitor increase or decrease? Justify</p> <p style="text-align: center;">OR</p>	
31 (II)	<p>(A) If a charge of $1\mu\text{C}$ is placed at the origin and another charge of $3\ \mu\text{C}$ placed at the point $(20\text{m}, 0\text{m}, 0\text{m})$ in an external uniform electric field of $40\text{V/m} \hat{i}$ with the electric potential at origin to be zero. Find the electrical potential energy of system.</p> <p>(B) If one charge particle is moved from A to C To B and another charge particle of equal magnitude is moved from A to D to B, In uniform external magnetic field. Then for which charge particle more work will be needed? (use fig for reference)</p>  <p>(C) Electrostatic potential is constant throughout the volume of conductor has the same value on its surface why?</p>	3+1+1
	<p><u>For VI candidates</u></p> <p>(C) If A charge particle is taken from A to B from two different path one path has resistance of 10Ω and another has capacitance of $3\mu\text{F}$. work done by which path will be more.</p>	
32(I)	<p>(A) Derive lens maker's formula.</p> <p>(B) Equi-convex lenses are to be manufactured from a glass of refractive index 1.55, with both faces of the same radius of curvature. What is the radius of curvature required if the focal length is to be 10cm?</p> <p style="text-align: center;">OR</p>	3+2
32(II)	<p>(A) Define angle of deviation in a prism?</p> <p>(B) Obtain the relation $A+\delta=i+e$ for a prism where A is the angle of prism, δ is the angle of deviation, i is the angle of incidence and e is the angle of emergence. Write this relation for the minimum deviation?</p> <p>(C) Write the condition for minimum deviation.</p>	1+3+1

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33(I)	<p>(A) State the working principle of a moving coil galvanometer? What modification is required in the galvanometer to make its scale linear?</p> <p>(B) If a galvanometer of resistance 49.5Ω has range of $0.05A$. What will be the value of resistance needed to convert it in ammeter of range $5A$?</p> <p>(C) How these two resistors should be connected to galvanometer in both cases?</p>	2+2+1
33(II)	<p>(A) An input potential $V_{in}=200 \sin 100\pi t$ V is provided to an ideal transformer having 1000 turns in primary coil and 100 turns in secondary coil as shown in figure. The load circuit has a resistance of 4Ω, a capacitive reactance of 2Ω and an inductive reactance of 6Ω.</p>  <p>Find:</p> <ul style="list-style-type: none"> (i) the output voltage across the load circuit (ii) the current flowing through the load circuit (iii) the power supplied to the load circuit by the transformer <p>(B) State the working principle of a transformer and explain how it is a key component in the transfer of electrical power over long distances.</p>	3+2

* Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current session i.e. 2025-26.

CHEMISTRY (CODE - 043)
SAMPLE QUESTION PAPER*
CLASS XII (2025-26)

Time: 3 hours

Max. Marks: 70

GENERAL INSTRUCTIONS:

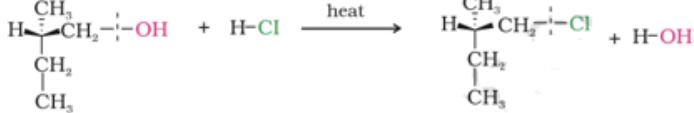
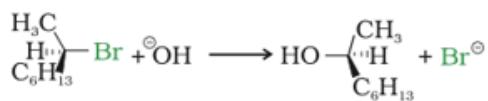
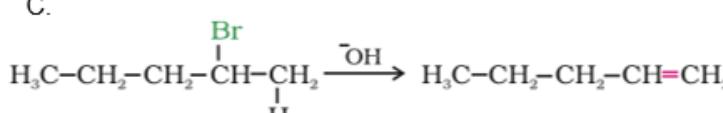
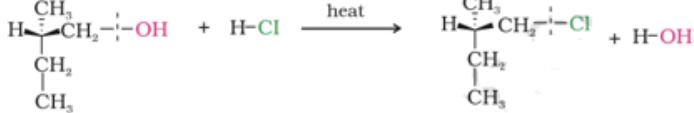
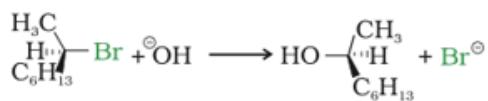
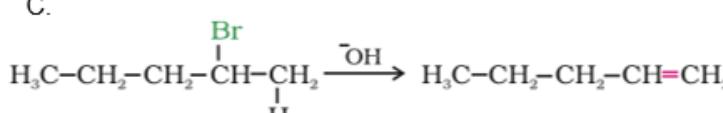
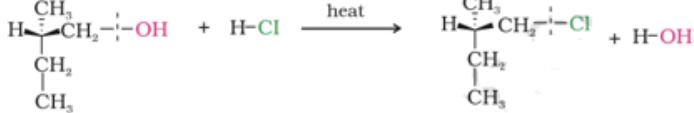
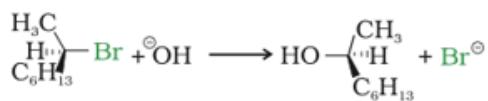
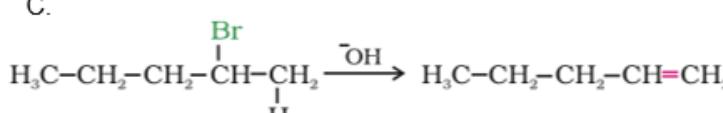
Read the following instructions carefully.

1. There are **33** questions in this question paper with internal choice.
2. SECTION A consists of 16 multiple-choice questions carrying 1 mark each.
3. SECTION B consists of 5 short answer questions carrying 2 marks each.
4. SECTION C consists of 7 short answer questions carrying 3 marks each.
5. SECTION D consists of 2 case-based questions carrying 4 marks each.
6. SECTION E consists of 3 long answer questions carrying 5 marks each.
7. All questions are compulsory.
8. Use of log tables and calculators is not allowed.

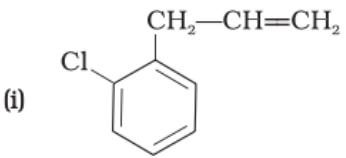
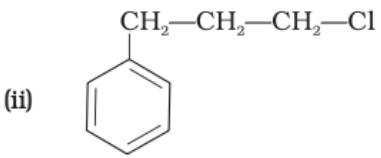
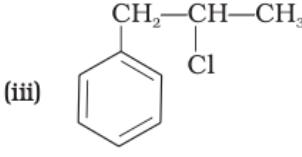
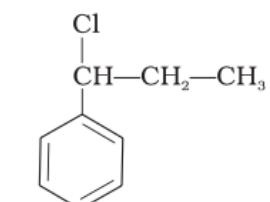
Section-A

Question 1 to 16 are multiple choice questions. Only one of the choices is correct. Select and write the correct choice as well as the answer to these questions.

1	Which of the following reaction will lead to formation of ethyl methyl ketone: A. heating $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{OH}$ with acidified $\text{Na}_2\text{Cr}_2\text{O}_7$ B. passing $\text{CH}_3\text{C}(\text{OH})\text{CH}_3$ over heated copper C. ozonolysis of $\text{CH}_3\text{CH}_2\text{C}(\text{CH}_3)=\text{CHCH}_3$ D. acetylene on reaction with $\text{HgSO}_4/\text{H}_2\text{SO}_4$	1
2	Consider the reaction and identify B and C $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl} \xrightarrow{\text{NaOH} + \text{Ethanol}} \text{A}$ $\text{A} \xrightarrow{\text{H}_2\text{O}, \text{H}^+} \text{B} \quad \text{and} \quad \text{A} \xrightarrow{\text{(i) B}_2\text{H}_6, \text{(ii) H}_2\text{O}_2, \text{OH}^-} \text{C}$ A. $\text{B}=\text{C}=\text{Butanol}$ B. $\text{B}=\text{Butanol}$, $\text{C}=\text{Butene}$ C. $\text{B}=\text{Butan-2-ol}$, $\text{C}=\text{Butanol}$ D. $\text{B}=\text{Butene}$, $\text{C}=\text{Butan-2-ol}$	1
3	The counter ion in the coordination compound $[\text{Co}(\text{NH}_3)_5(\text{NO}_2)]\text{Cl}_2$ is A. Ammine B. Cobalt	1

	C. Chloride D. Nitro											
4	<p>The organic compounds A, B and C are amines having equivalent molecular weight. A and B on reaction with benzene sulphonyl chloride give white precipitate, however white precipitate obtained from compound B remains insoluble in NaOH.</p> <p>The variation in the boiling point of A, B and C can be seen as :</p> <p>A. A>B>C B. B>A>C C. A=B > C D. C>B>A</p>	1										
5	<p>70 gm solute is dissolved in 700 gm solvent to prepare a solution having density 1.5 g/ml. The ratio of its molality and molarity will be:</p> <p>A. 0.77 B. 1.4 C. 0.73 D. 1.3</p>	1										
6	<p>Match the column I and column II:</p> <table border="1"> <thead> <tr> <th>Column I</th> <th>Column II</th> </tr> </thead> <tbody> <tr> <td>A. </td> <td>(i) Addition reaction</td> </tr> <tr> <td>B. </td> <td>(ii) Elimination reaction</td> </tr> <tr> <td>C. </td> <td>(iii) S_N^2 reaction</td> </tr> <tr> <td>D. </td> <td>(iv) S_N^1 reaction</td> </tr> </tbody> </table> <p>A. A-(i), B-(ii), C-(iii), D-(iv) B. A-(iv), B-(ii), C-(iii), D-(i) C. A-(i), B-(iii), C-(ii), D-(iv) D. A-(iv), B-(iii), C-(ii), D-(i)</p>	Column I	Column II	A. 	(i) Addition reaction	B. 	(ii) Elimination reaction	C. 	(iii) S_N^2 reaction	D. 	(iv) S_N^1 reaction	1
Column I	Column II											
A. 	(i) Addition reaction											
B. 	(ii) Elimination reaction											
C. 	(iii) S_N^2 reaction											
D. 	(iv) S_N^1 reaction											

7	<p>In o-cresol, the –OH group is attached to the carbon that is:</p> <ol style="list-style-type: none"> sp³ hybrid sp² hybrid sp hybrid dsp² hybrid 	1
8	<p>Which of the following is laevorotatory in nature :</p> <ol style="list-style-type: none"> alpha D – glucose beta -D- glucose beta-D- fructose sucrose 	1
9	<p>The name inner transition metals is often used to refer to the</p> <ol style="list-style-type: none"> lanthanoids actinoids both lanthanoids and actinoids d block elements 	1
10	<p>Λ_m^o CH₃COOH can be calculated if the values of the following are given:</p> <ol style="list-style-type: none"> Λ_m^o HCl, Λ_m^o KCl and Λ_m^o CH₃COOK Λ_m^o NaCl, Λ_m^o KCl and Λ_m^o CH₃COONa Λ_m^o H₂SO₄, Λ_m^o Na₂SO₄ and Λ_m^o CH₃COONa <p>A. Only 1 B. Either 1 or 2 C. Either 1 or 3 D. Either 2 or 3</p>	1
11	<p>Which of the following will give a yellow or orange ppt. with 2,4 DNP?</p> <p>(i) Propanal (ii) Propanone (iii) Propanoic acid</p> <p>A. (i) and (ii) B. (ii) and (iii) C. (i) and (iii) D. (i), (ii) and (iii)</p>	1

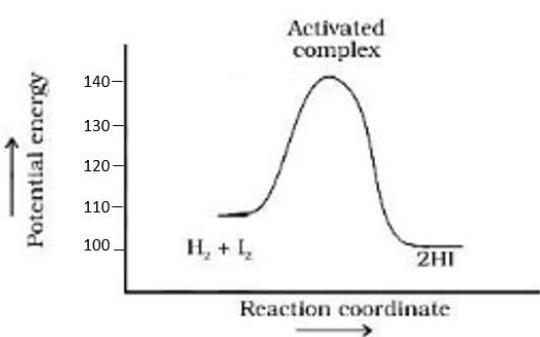
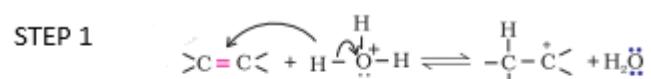
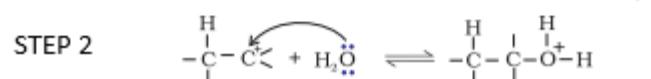
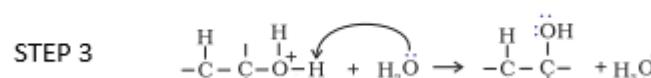
12	<p>Identify the secondary benzylic halide and primary alkyl halide from the following:</p> <p>(i) </p> <p>(ii) </p> <p>(iii) </p> <p>(iv) </p> <p>A. (i) and (iii) B. (iv) and (ii) C. (iii) and (iv) D. (i) and (ii)</p>	1
13	<p>Assertion (A): Secondary aliphatic amines react with nitrous acid to form aliphatic diazonium salts which being unstable, liberate nitrogen gas quantitatively.</p> <p>Reason: Nitrogen gas evolved on reaction with nitrous acid can be used for the estimation of proteins and amino acids.</p> <p>Select the most appropriate answer from the options given below:</p> <p>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</p>	1
14	<p>Assertion (A): Care should always be taken to ensure that solutions that flow in the blood stream are of the same osmotic pressure as that of the blood.</p> <p>Reason(R): Sodium ion and potassium ions are responsible for maintaining proper osmotic pressure balance inside and outside of the cells of organism.</p> <p>Select the most appropriate answer from the options given below:</p> <p>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</p>	1

15	<p>Assertion (A): Starch forms colloidal solution with water. Reason (R): Starch contains 80-85% of amylopectin which is insoluble in water.</p> <p>Select the most appropriate answer from the options given below:</p> <ol style="list-style-type: none"> Both A and R are true, and R is the correct explanation of A. Both A and R are true, and R is not the correct explanation of A. A is true but R is false. A is false but R is true 	1
16	<p>Assertion (A): Secondary cells are used in invertors. Reason (R): A primary cell can be recharged by passing current through it in the opposite direction after it has been used.</p> <p>Select the most appropriate answer from the options given below:</p> <ol style="list-style-type: none"> Both A and R are true, and R is the correct explanation of A. Both A and R are true, and R is not the correct explanation of A. A is true but R is false. A is false but R is true 	1

Section-B

Question No. 17 to 21 are very short answer questions carrying 2 marks each.

17	<p>Attempt either option A or B</p> <p>A. Answer the following:</p> <ol style="list-style-type: none"> When 50 mL of phenol and 50 mL of aniline are mixed, predict whether the volume of the solution is equal to, greater than or less than 100 mL. Give reason to support your answer. Ritesh suggested adding salt to the box containing ice. He said this would keep the cold drink bottles cold for a longer time. How will Ritesh justify his suggestion? <p>OR</p> <p>B. Answer the following:</p> <ol style="list-style-type: none"> BaCl_2 on reaction with Na_2SO_4 in aqueous solution gives white precipitate. If the two solutions are separated by a semi-permeable membrane, will there be appearance of a white precipitate due to osmosis? Why does water stops boiling when sugar is added to boiling water. 	2x1
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18	<p>Consider the graph for the reaction</p> $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$  <p>I. Calculate enthalpy of reaction and activation energy for the backward reaction. II. How will the catalyst affect the rate of this reaction? Explain.</p> <p>(for visually challenged learners)</p> <p>I. Define activation energy. What will happen to activation energy if we increase the temperature? II. How will the catalyst affect the rate of an endothermic reaction?</p>	2x1
19	<p>Carry out following conversions :</p> <p>I. Nitrobenzene to 4- bromobenzenamine II. Chlorophenylmethane to 2-phenyl-ethanamine</p>	2x1
20	<p>Write the formula of the following coordination complex:</p> <p>I. diaquasilver(I) dichloridoargentate(I) II. dihydroxidobis(triphenylphosphine)nickel(II)</p>	2x1
21	<p>The mechanism of formation of alcohols from alkenes is given below. Rectify the errors in the mechanism and rewrite the corrected steps</p> <p>STEP 1 </p> <p>STEP 2 </p> <p>STEP 3 </p>	2

Section-C

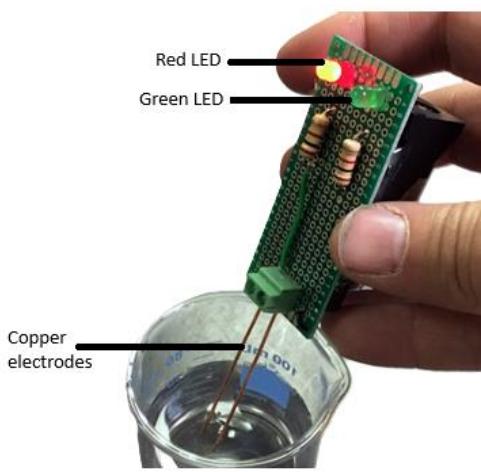
Question No. 22 to 28 are short answer questions, carrying 3 marks each.

22	What will be the vapour pressure of a 1 molal aqueous solution of $MgCl_2$, assuming dissociation of $MgCl_2$ to be 70 mole percent? (Vapor pressure of pure water at 25 °C is 23.8 mmHg)	3
23	Write the Nernst equation for the following: I. $Ni(s) + Cu^{2+}(aq) \rightarrow Ni^{2+}(aq) + Cu(s)$ II. $Al(s) + FeSO_4(aq) \rightarrow Al_2(SO_4)_3(aq) + Fe(s)$ III. $Mg(s)/Mg^{2+}(aq) // Ag^+(aq)/Ag(s)$	3x1
24	Explain the following: I. Toluene on treatment with Cl_2 in sunlight gives benzyl chloride whereas when treated with Cl_2 in dark gives o-chlorobenzene and p-chlorobenzene. II. Finkelstein reaction is carried out in the presence of dry acetone. III. neo pentylchloride has lower boiling point than isopentylchloride.	3x1
25	Which of the following elements will: I. exhibit similar magnetic behaviour and why? Magnesium (Atomic No. 12), Chromium (Atomic No. 24), Iron (Atomic No. 26) and Molybdenum (Atomic No. 42). II. form white salts and why? Zinc (Atomic No. 30), Scandium (Atomic No. 21), Nickel (Atomic No. 28) and Vanadium (Atomic No. 23)	2x1.5
26	Arrange the products obtained in the following cases in the increasing order of their pK_a values: A. Oxidation of ethanol in presence of acidified potassium dichromate B. Reaction of propanoic acid with Br_2 in the presence of red Phosphorus C. Reaction of isopropyl magnesium bromide with carbon dioxide, followed by hydrolysis. D. Reaction of propanoic acid with Cl_2 in the presence of red Phosphorous.	3

27	<p>Carry out the following conversions. (Attempt any 3)</p> <ol style="list-style-type: none"> Butan-2-one to 3-Methylpentan-3-ol Anisole to 4-Methoxytoluene Phenol to Benzene Chloroethane to Ethoxy ethane 	3x1						
28	<p>Answer the following questions:</p> <ol style="list-style-type: none"> Are the enthalpies of atomisation of Zinc and Copper matched correctly? Justify your answer. <table border="1"> <thead> <tr> <th>Element</th><th>Enthalpy of atomisation/ kJmol^{-1}</th></tr> </thead> <tbody> <tr> <td>Zinc</td><td>339</td></tr> <tr> <td>Copper</td><td>130</td></tr> </tbody> </table> <ol style="list-style-type: none"> Out of sulphuric acid and hydrochloric acid, which acid will you prefer for permanganate titrations and why? $5\text{NO}_2^- + 2\text{MnO}_4^- + 6\text{H}^+ \rightarrow$ 	Element	Enthalpy of atomisation/ kJmol^{-1}	Zinc	339	Copper	130	3x1
Element	Enthalpy of atomisation/ kJmol^{-1}							
Zinc	339							
Copper	130							

Section D

Question No. 29 & 30 are case-based/data -based questions carrying 4 marks each.

29	<p>Conductivity of Aqueous Solutions</p> <p>Electrical conductivity is based on the flow of ions. Slightly ionized substances are <i>weak electrolytes</i>. Weak acids and bases would be categorized as weak electrolytes because they do not completely dissociate in solution.</p> <p>Highly ionized substances are <i>strong electrolytes</i>. Strong acids and salts are strong electrolytes because they completely ionize in solution. The ions carry the electric charge through the solution thus creating an electric current. The current, if sufficient enough, will light one or both LEDs on a <i>conductivity meter</i>, shown at right.</p> <p>The meter has a 9V battery, two parallel copper electrodes and</p> 	
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two LED's – one green and one red. The conductivity of a solution can be tested by switching the meter on and dipping the copper electrodes in the solution to be tested.

Substances that do not conduct an electric current are called *non-electrolytes*. Non-electrolytes do not ionize; they do not contain moveable ions. The LEDs of a conductivity meter will not light because there are no ions to carry the electric current.

The table given below is a guide to the possible conductivity measurements

Scale	Red LED	Green LED	Conductivity
0	off	off	low or none
1	dim	off	low
2	medium	off	medium
3	bright	dim	high
4	very bright	medium	very high

source: <https://chem.libretexts.org>

Based on the information provided above, answer the following questions:

1+1+2

- I. Is it possible to identify whether the given solution is 1 M NaOH or 1 M HCl using the conductivity meter? Justify your answer.
- II. What is the possible pH value of solution if the glow of green LED is medium and the red LED glows very brightly?

(i) 1 (ii) 13 (iii) 5 (iv) 8

(a) (i) and (ii)
(b) (i) and (iii)
(c) (ii) and (iv)
(d) (iii) and (iv)

OR

Write down the observations if the conductivity meter is dipped in distilled water.

III. Refer to the table given below and draw the molar conductivity vs. concentration curve for solution A and B.

Solution	Red LED	Green LED
A	bright	dim
B	dim	off

(For Visually Challenged students)

Conductivity of Aqueous Solutions

Conductivity meter is a device which is used to identify whether the given solution is a strong, weak or non-electrolyte. The meter has a 9V battery, and two parallel copper electrodes and a 5 point scale (0 to 4) to measure conductivity of a solution. The conductivity of a solution can be tested by switching the meter on and dipping the copper electrodes in the solution to be tested.

Electrical conductivity is based on the flow of ions. Highly ionized substances are *strong electrolytes*. Strong acids and salts are strong electrolytes because they completely ionize in solution. The ions carry the electric charge through the solution thus creating an electric current. The current, if sufficient enough, will show a value of 3 or 4 on the conductivity *meter*.

Slightly ionized substances are *weak electrolytes*. Weak acids and bases would be categorized as weak electrolytes because they do not completely dissociate in solution. The values for weak electrolytes are 1 or 2 on the conductivity scale.

Substances that do not conduct an electric current are called *non-electrolytes*. Non-electrolytes do not ionize; they do not contain moveable ions. The conductivity meter shows a value of 0 in such a case as there are no ions to carry the electric current.

The following table is a guide to the possible conductivity values:

Scale	Conductivity
0	low or none
1	low
2	medium
3	high
4	very high

Based on the information provided above, answer the following questions:

1+1+2

- Is it possible to identify whether the given solution is 1 M NaOH or 1 M HCl using the conductivity meter? Justify your answer.
- What is the possible pH value of solution if the scale shows the value “4”
 - (i) 1 (ii) 13 (iii) 5 (iv) 8
 - (a) (i) and (ii)
 - (b) (i) and (iii)
 - (c) (ii) and (iv)
 - (d) (iii) and (iv)

OR

What will be value on the scale if the conductivity meter is dipped in distilled water?

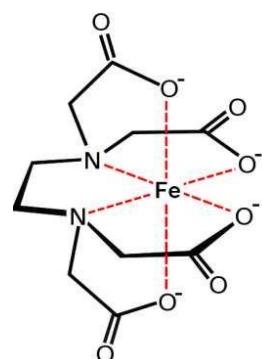
- Predict the electrolyte is a strong or weak electrolyte on the basis of the following observation:

Solution	Scale
A	3
B	2

30

Iron-EDTA complex in food fortification

Food fortification is defined as the practice of adding vitamins and minerals to commonly consumed foods during processing to increase their nutritional value. It is a proven, safe and cost-effective strategy for improving diets and for the prevention and control of micronutrient deficiencies. A food product (such as rice, wheat flour, edible oil) that is fortified through the addition of fortificants is called a “vehicle”.



In African and south Asian countries 40% of the population suffers from anaemia. Average human needs nearly 10mg of iron daily. Iron fortification may be useful in fighting iron deficiencies in humans. Reduced iron and several iron salts have been used in the past as iron fortification, however, not all are suitable for this purpose, in terms of iron absorption. Recent studies have shown that beverages containing sugar fortified with either Ferrous sulphate or Fe(III)- EDTA complex have high rate of absorption of iron.

Ferrous sulphate as well as Fe(III)- EDTA is suitable to enrich sugar, but while iron from ferrous sulphate is precipitated and poorly absorbed when fortified sugar is added to beverages such as tea, Fe(III)- EDTA reacts slowly with tea and iron is not precipitated for at least 24 hr.

Fe(III)-EDTA as iron fortification, has demonstrated so far, more advantages than that observed from other iron salts, including ferrous sulphate. But, EDTA is a chelating agent and its use in food technology to prevent oxidative damage of food has been restricted. Excessive consumption of EDTA can cause abdominal cramps, nausea, low blood pressure and damage to kidneys. According to National Institute of Health, it is unsafe to consume more than 3 g of EDTA per day or continuously for more than 5 to 7 days.

The amount of EDTA necessary for 10 mg of iron fortification, is about 60 mg. This is within the safe limits and is comparable to the usual amount added to the diet.

(source: Layrisse, M., & Martinez-Torres, C. (1977). Fe (III)-EDTA complex as iron fortification. *The American Journal of Clinical Nutrition*, 30(7), 1166-1174.)

Based on the information provided above, answer the following questions:

1+1+2

- Why is Fe(III)-EDTA complex stable as compared to Ferrous sulphate?

OR

	<p>What happens when hard water is titrated against Na_2EDTA?</p> <p>II. You are a doctor, working in Somalia. Will you recommend iron fortified food to your patients? Support your answer with references from the passage.</p> <p>III. What is the denticity of the ligand in the $\text{Fe}(\text{III})$ EDTA complex. Name the atom(s) through which it can bind to the central metal ion.</p> <p>Write the structure of EDTA. (Refer to figure 1)</p> <p>For Visually challenged candidates</p> <p>Iron-EDTA complex in food fortification</p> <p>Food fortification is defined as the practice of adding vitamins and minerals to commonly consumed foods during processing to increase their nutritional value. It is a proven, safe and cost-effective strategy for improving diets and for the prevention and control of micronutrient deficiencies. A food product (such as rice, wheat flour, edible oil) that is fortified through the addition of fortificants is called a “vehicle”.</p> <p>Reduced iron and several iron salts have been used in the past as iron fortification, however, not all are suitable for this purpose, in terms of iron absorption. Recent studies have shown that beverages containing sugar fortified with either Ferrous sulphate or $\text{Fe}(\text{III})$- EDTA complex have high rate of absorption of iron.</p> <p>Ferrous sulphate as well as $\text{Fe}(\text{III})$- EDTA is suitable to enrich sugar, but while iron from ferrous sulphate is precipitated and poorly absorbed when fortified sugar is added to beverages such as tea, $\text{Fe}(\text{III})$- EDTA reacts slowly with tea and iron is not precipitated for at least 24 hr.</p> <p>$\text{Fe}(\text{III})$-EDTA as iron fortification, has demonstrated so far, more advantages than that observed from other iron salts, including ferrous sulphate. But, EDTA is a chelating agent and its use in food technology to prevent oxidative damage of food has been restricted. Excessive consumption of EDTA can cause abdominal cramps, nausea, low blood pressure and damage to kidneys. According to National Institute of Health, it is unsafe to consume more than 3 g of EDTA per day or continuously for more than 5 to 7 days.</p> <p>The amount of EDTA necessary for 10 mg of iron fortification, is about 60 mg. This is within the safe limits and is comparable to the usual amount added to the diet.</p> <p>(source: Layrisse, M., & Martinez-Torres, C. (1977). Fe (III)-EDTA complex as iron fortification. <i>The American Journal of Clinical Nutrition</i>, 30(7), 1166-1174.)</p>	
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	<p>Based on the information provided above, answer the following questions:</p> <p>I. Why is Fe(III)-EDTA complex stable as compared to Ferrous sulphate?</p> <p style="text-align: center;">OR</p> <p>What happens when hard water is titrated against Na₂EDTA?</p> <p>II. You are a doctor, working in Somalia. Will you recommend iron fortified food to your patients? Support your answer with references from the passage.</p> <p>III. (a)What is the denticity of the ligand in the Fe(III) EDTA complex. Name the atom(s) through which it can bind to the central metal ion. (b) EDTA is an electron acceptor or an electron donor?</p>	1+1+2
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Section-E

Question No. 31 to 33 are long answer type questions carrying 5 marks each.

31	<p>Attempt either A or B</p> <p>A. Answer the following questions:</p> <p>I. Write the structure of expected product of Cannizarro reaction of 2-chlorobenzaldehyde.</p> <p>II. How would the presence of -SO₃H group effect the basic strength of aniline.</p> <p>III. Convert acetic acid to ethanamine.</p> <p>IV. Write the steps to prepare Benzoic acid from Benzoyl chloride.</p> <p>V. Give a chemical test to distinguish between: propanal and propanone</p> <p style="text-align: center;">OR</p> <p>B. Answer the following questions:</p> <p>I. Write the structure of expected product of Wolf-Kishner reduction of 2 –methylbutanal.</p> <p>II. How would the presence of -SO₃H group effect the acidic strength of benzoic acid</p> <p>III. Prepare acetic acid from ethanamine.</p> <p>IV. Convert Aniline to benzoic acid.</p> <p>V. Give a chemical test to distinguish between: propanal and ethanal.</p>	5x1
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32

Attempt either A or B

5x1

A. Answer the following questions:

- Identify and give any one point of difference between the protein present in the hair and protein present in egg albumin.
- Both glucose and sucrose have aldehydic group, then why does only glucose reduces Fehling's Reagent and not sucrose?
- Why do amino acids behave as salts?
- What chemical change takes place during curdling of milk?
- Doctor advised a 50 year old woman enough exposure to sunlight and addition of fish and egg yolk to her diet. What is the possible disease diagnosed by the doctor?

OR

B. Answer the following questions:

- Identify and give any one point of difference between the carbohydrate present in cane sugar and carbohydrate present in milk.
- Glucose is an aldohexose and a monosaccharide. Which oxidising agent should be used to bring about oxidation of only the aldehydic group present in glucose?
- Amino acid $\text{HOOC-CH}_2\text{CH}(\text{NH}_2)\text{CH}_2\text{COOH}$. Predict whether the pH of this amino acid will be >7 , 7 or <7 .
- Name the two major molecular shapes formed due to the folding of secondary structure of proteins.
- Ashish's gums bleed frequently. The doctor's prescription mentioned that Ashish is suffering from scurvy. Help him to identify two food sources to help him recover faster.

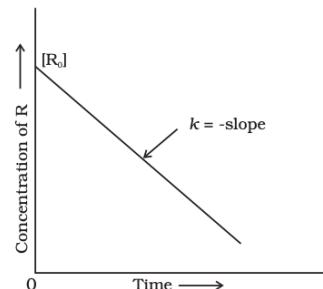
33

Attempt either A or B

3+2

A.

- The rate of a reaction triples when the temperature changes from 298 K to 318 K. Calculate the energy of activation of the reaction assuming that it does not change with temperature. (Given $R = 8.314 \text{ J K}^{-1}\text{mol}^{-1}$, $\log 3 = 0.4771$)
- Identify the order of reaction and write its integrated rate equation mentioning what each term in the equation represents.

**OR**

	<p>B.</p> <p>I. Consider the following first order thermal decomposition of SO_2Cl_2 at a constant volume</p> $\text{SO}_2\text{Cl}_2(\text{g}) \rightarrow \text{SO}_2(\text{g}) + \text{Cl}_2(\text{g})$ <p>If the total pressure of the gases is found to be 200 torr after 10 seconds and 300 torr upon the complete decomposition of SO_2Cl_2. Calculate the rate constant. (Given $\log 3 = 0.4771$, $\log 2 = 0.3010$)</p> <p>II. For a bimolecular elementary reaction $\text{A} + \text{B} \rightarrow \text{Products}$. Write the expression for the rate of reaction relating temperature and activation energy for the reaction and also mention what each term represents in the equation.</p>	3+2
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BIOLOGY – Code No. 044
SAMPLE QUESTION PAPER*
CLASS – XII (2025-26)

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. Answer all 33 questions. 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 labeled diagrams should be drawn.

Section – A

Q. No. 1 to 12 are multiple choice questions. Only one of the choices is correct. Select and write the correct choice as well as the answer to these questions.

Q. No	Question	Marks
1	The male gametes are formed by: A. Mitotic division of nucleus of vegetative cell B. Meiotic division of nucleus of vegetative cell C. Mitotic division of nucleus of generative cell D. Meiotic division of nucleus of generative cell	1
2	The primary endosperm nucleus is formed by fusion of which of the following? A. A male gamete and a female gamete B. A male gamete and two polar nuclei C. A female gamete and two synergids D. Two male gametes and an egg cell	1
3	During the menstrual cycle of a human female, formation of graafian follicle is stimulated by secretion of which of the following gonadotropin hormones? A. Estrogen and progesterone B. FSH and Estrogen C. FSH and LH D. Progesterone and LH	1

**Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current session i.e. 2025-26.*

4	<p>The experimental proof on the thermal stability of genetic material was first provided by experiments of</p> <ol style="list-style-type: none"> Hershey and Chase Meselson and Stahl Frederick Griffith Jacob and Monod 	1
5	<p>Short stretches of DNA used to identify complementary sequences in a sample are called</p> <ol style="list-style-type: none"> Probes Markers Primers Minisatellites 	1
6	<p>Select the incorrect statement among the following.</p> <ol style="list-style-type: none"> $p^2+2pq+q^2 = 1$. This is binomial expansion of $(p+q)^2$. When frequency measured differs from expected values, the difference (direction) indicates the extent of evolutionary change. Hardy-Weinberg principle says that phenotype frequencies in a population are stable and are constant from generation to generation. The gene pool (total genes and their alleles in a population) remains constant. This is called genetic equilibrium. Sum total of all the allelic frequencies is 1. 	1
7	<p>Albinism is known to be due to an autosomal recessive mutation. The first child of a couple with normal skin pigmentation was an albino. What is the probability that their second child will also be an albino?</p> <ol style="list-style-type: none"> 100% 25% 50% 75% 	1
8	<p>"In Cricket species, the sound produced by rubbing the wings or legs together play a crucial role in attracting mates, any change in the morphology of Cricket legs could potentially affect their ability to produce sound".</p> <p>A mutant Cricket had thicker hind legs. What would you expect for this cricket species?</p> <ol style="list-style-type: none"> The leg mutation will not lead to speciation if they diversify into new habitats. The leg mutation will have little effect on other external features, and therefore have little effect on speciation. The leg mutation will have no effect on behavior, and thus have little effect on speciation. The leg mutation might lead to reproductive isolation and speciation due to an effect on the mating call. 	1

9	<p><i>Plasmodium</i> is a pathogen that causes malaria. Identify the correct sequence of transmission of the pathogen.</p> <table border="1"> <thead> <tr> <th></th><th>I Stage of pathogen as it is transferred by vector bite</th><th>II First site in the host body where the pathogens infect and proliferates</th><th>III Second site in the host body where the pathogen infects and manifests clinical symptoms</th><th>IV Stage of pathogen as it is transferred to a new vector</th></tr> </thead> <tbody> <tr> <td>A</td><td>Sporozoites</td><td>Erythrocyte infection</td><td>Liver infection</td><td>Gametocytes</td></tr> <tr> <td>B</td><td>Gametocytes</td><td>Erythrocyte infection</td><td>Liver infection</td><td>Sporozoites</td></tr> <tr> <td>C</td><td>Gametocytes</td><td>Liver infection</td><td>Erythrocyte infection</td><td>Sporozoites</td></tr> <tr> <td>D</td><td>Sporozoites</td><td>Liver infection</td><td>Erythrocyte infection</td><td>Gametocytes</td></tr> </tbody> </table>		I Stage of pathogen as it is transferred by vector bite	II First site in the host body where the pathogens infect and proliferates	III Second site in the host body where the pathogen infects and manifests clinical symptoms	IV Stage of pathogen as it is transferred to a new vector	A	Sporozoites	Erythrocyte infection	Liver infection	Gametocytes	B	Gametocytes	Erythrocyte infection	Liver infection	Sporozoites	C	Gametocytes	Liver infection	Erythrocyte infection	Sporozoites	D	Sporozoites	Liver infection	Erythrocyte infection	Gametocytes	1
	I Stage of pathogen as it is transferred by vector bite	II First site in the host body where the pathogens infect and proliferates	III Second site in the host body where the pathogen infects and manifests clinical symptoms	IV Stage of pathogen as it is transferred to a new vector																							
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C	Gametocytes	Liver infection	Erythrocyte infection	Sporozoites																							
D	Sporozoites	Liver infection	Erythrocyte infection	Gametocytes																							
10	<p>Which mRNA will be translated to a polypeptide chain containing 8 amino acids?</p> <p>A. AUGUUAAUAGACGAGUAGCGACGAUGU B. AUGAGACGGACUGCAUUCCCAACCUGA C. AUGCCCAACCGUUUAUCAUGCUAG D. AUGUCGACAGUCUAAAACAGCGGG</p>	1																									
11	<p>In order to isolate genetic material of a bacterium, the cell must be treated with</p> <p>A. Lysozyme, ribonuclease, protease, chilled ethanol B. Cellulase, ribonuclease, protease, chilled ethanol C. Chitinase, ribonuclease, chilled ethanol, water D. Ribonuclease, protease, chilled ethanol, water</p>	1																									
12	<p>Integrated Pest Management involves</p> <p>I. Using pesticides/insecticides judiciously II. Using biocontrol agents III. Engaging in organic farming</p> <p>A. Only I B. Only II C. Both I and II D. Only III</p>	1																									
<p>Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:</p> <p>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.</p>																											
13	<p>Assertion (A): The ability of the pistil to recognise the pollen is the result of a continuous dialogue between pollen and pistil. Reason (R): This electrical dialogue allows only compatible pollen to germinate.</p>	1																									

*Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current session i.e. 2025-26.

14	Assertion (A): Some organisms are better adapted to survive in an otherwise hostile environment. Reason (R): Adaptive ability is inherited and has a genetic basis.	1
15	Assertion (A): Excess dose of coke or crack produces a sense of euphoria, increased energy and causes hallucinations. Reason(R): It interferes with the transport of dopamine	1
16	Assertion (A): Rosie was the first transgenic cow to make more nutritionally balanced milk for consumption by human babies. Reason (R): The milk of Rosie cow contained human beta- lactalbumin which made the milk rich in protein.	1

Section - B

17	During artificial hybridisation it is important to ensure that only desired pollen grains are used for pollination. How is it ensured?	2																																
18	How is the rate of initiation of RNA polymerase at a given promoter in a transcriptional unit of prokaryotes regulated ?	2																																
19	<p>The table below shows a hypothetical blood report of a patient.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Test description</th> <th style="text-align: left;">Observed value</th> <th style="text-align: left;">Unit</th> <th style="text-align: left;">Reference range</th> </tr> </thead> <tbody> <tr> <td>Leucocytes</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total leucocyte count</td> <td>1100</td> <td>Per Microliter</td> <td>4400-11000</td> </tr> <tr> <td>Neutrophils</td> <td>31</td> <td>%</td> <td>55-70</td> </tr> <tr> <td>Lymphocytes</td> <td>25</td> <td>%</td> <td>20-40</td> </tr> <tr> <td>Basophils</td> <td>0.5</td> <td>%</td> <td>0.5 - 1</td> </tr> <tr> <td>Eosinophils</td> <td>02</td> <td>%</td> <td>1-4</td> </tr> <tr> <td>Monocytes</td> <td>0</td> <td>%</td> <td>1-8</td> </tr> </tbody> </table> <p>A. Looking at the values suggest which defense mechanism/ immunity is affected and state how this defense mechanism provides immunity. B. Name the barrier with least count and enumerate its role in providing immunity.</p>	Test description	Observed value	Unit	Reference range	Leucocytes				Total leucocyte count	1100	Per Microliter	4400-11000	Neutrophils	31	%	55-70	Lymphocytes	25	%	20-40	Basophils	0.5	%	0.5 - 1	Eosinophils	02	%	1-4	Monocytes	0	%	1-8	2
Test description	Observed value	Unit	Reference range																															
Leucocytes																																		
Total leucocyte count	1100	Per Microliter	4400-11000																															
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Eosinophils	02	%	1-4																															
Monocytes	0	%	1-8																															
20	A cheese maker claims to be a biotechnologist. How will you support the same?	2																																
21	<p><u>Attempt either option A or B.</u></p> <p>A.</p> <p>(i) Compare the two ecological pyramids of biomass I and II given below and explain the situations in which this is possible.</p>	2																																

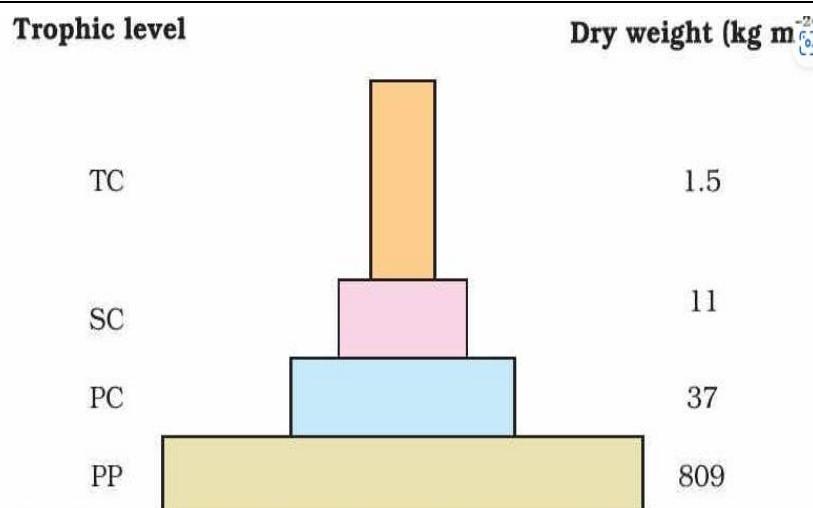


Fig. I

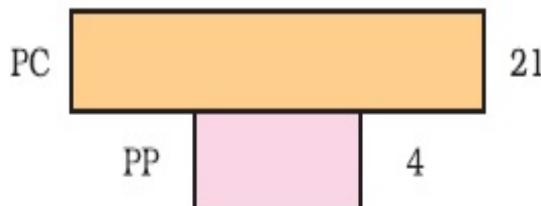


Fig. II

(ii) Construct an ideal pyramid of energy if 200,000 joules of sunlight are available.

For Visually impaired students:

A.

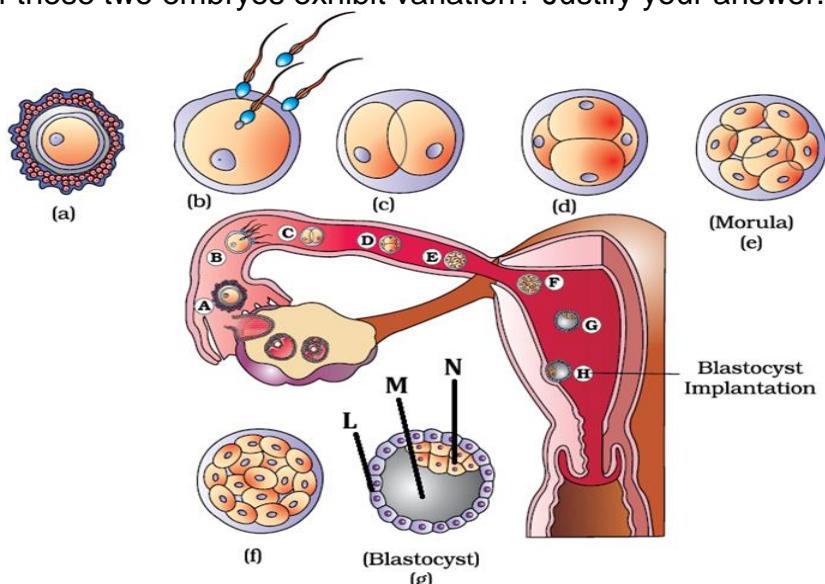
- (i) Compare the upright and inverted ecological pyramids of biomass and explain the situations in which this is possible.
- (ii) Construct an ideal pyramid of energy if 200,000 joules of sunlight is available.

OR

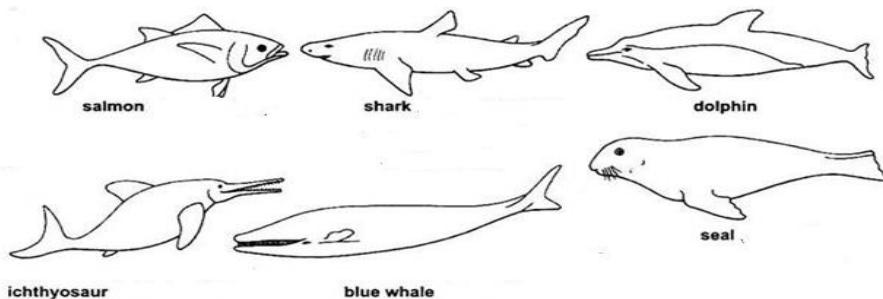
B. A tropical rainforest in South America is home to more than 40,000 species of plants, 3,000 of fishes, 1,300 of birds, 427 of mammals, 427 of amphibians, 378 of reptiles and 1,25,000 insects, snails and worms.

- (i) From the given data, calculate the total number of known vertebrate species in the rainforest.
- (ii) Give a reason to justify the huge difference in the number of plant and animal species.

Section - C

22	<p>Suggest a suitable contraceptive device for the following cases with justification.</p> <ol style="list-style-type: none"> Mohini does not want to take the risk of conception and sexually transmitted infections (STIs). Lalita has two children and does not want any more children. Geeta wants a contraceptive that she can take till she wants to avoid conception and can resume back to her fertile life without the intervention of the doctor. Also, it should have a lower failure rate. 	3
23	<p>Given below is a figure showing transport of ovum, fertilisation and passage of growing embryo through fallopian tube in a human female. Answer the questions that follow:</p> <ol style="list-style-type: none"> What will be the ploidy of cells shown in (a) and (c) stage in the figure given below? What will happen if component L as shown in the figure (g) given below does not attach properly to the endometrium? In a pregnant mother (case X), during early pregnancy, the fertilised egg splits into two embryos at stage C shown in the figure given below, resulting in the formation of twins. Will the genome of cells of these two embryos exhibit variation? Justify your answer. 	3
24	<p><u>For Visually impaired students</u></p> <p>Explain the events and journey of an ovum in the fallopian tube of a mother from fertilisation stage to implantation.</p> <p>In guinea pigs, black coat colour (G) dominates over white (g) and brown eyes (B) dominate over blue (b). The alleles for coat colour and eye colour are not linked. What will be the probability of the offspring having blue eyes and a white coat if both parents are heterozygous for eye and coat colour? Find the probability using a Punnett square</p>	3

25 Shown below are certain aquatic vertebrates, where natural selection has favoured them to develop certain characteristics which enable them to live in water.



A. Name and explain the phenomenon exhibited by the above animals.
 B. Which one of the above is the most primitive one? What is its significance?

For Visually impaired students

A. What are the basic conceptual similarities and differences between Lamarckian and Darwinian theory of evolution?
 B. Give an example that supports any one of the above two theories.

26 The Biological Oxygen Demand (BOD) of a primary effluent during sewage treatment is reduced. Enlist the process of how this is achieved.

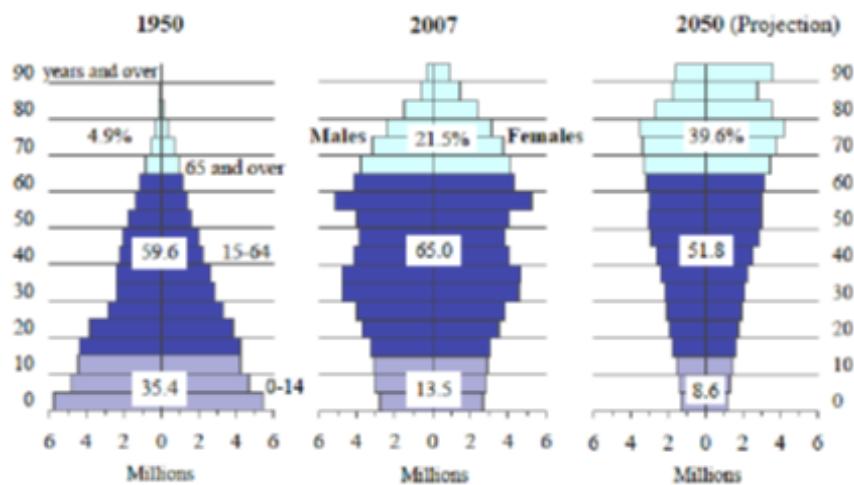
Attempt either option A or B.

A. Expand ELISA. On what principle is the ELISA test based? List two ways by which an infection can be detected by this test.

OR

B. Gene expression can be controlled with the help of complementary RNA molecules. Justify it with the help of an example.

28 The population pyramids of Japan for 1950, 2007 and 2050 (projections) are shown below to answer the questions that follow:



C. Identify the age pyramids for 1950, 2007 and 2050.
 D. What insights can you gain about their population dynamics?

For visually impaired students

The population pyramid of Japan for 1950, 2007 and 2050 (projections) shows the shape of a pyramid, broad-based, inverted bell and urn shape, respectively. Answer the questions that follow:

A. Identify the age pyramids for 1950, 2007 and 2050.
 B. What insights can you gain about their population dynamics?

Section - D

29

Given below is a set of information about some fruits and seeds.

Fruit	Fruit and seed formation
P	Nucellar cells surrounding the embryo sac develop into embryos.
Q	Ovary develops into the fruit by the application of growth hormones.
R	Thalamus contributes to fruit formation.
S	Ovary matures into a fruit after fertilisation.

On the basis of the information provided above, answer the following questions with justification for each answer.

A. How many embryo sacs will be present in each ovule of S before maturation and how many egg(s) will be present in each embryo sac when the embryo sac is developed from a single megasporangium? (1)

B.

- (i) Which of these fruits exhibits polyembryony? Will their embryos exhibit genetic variation? Justify. (2)
- (ii) What will be ploidy of the embryonic cells in the above case? (2)

Attempt either subpart C or D.

C. Which of these fruits can be considered as parthenocarpic? Give a reason. (1)

OR

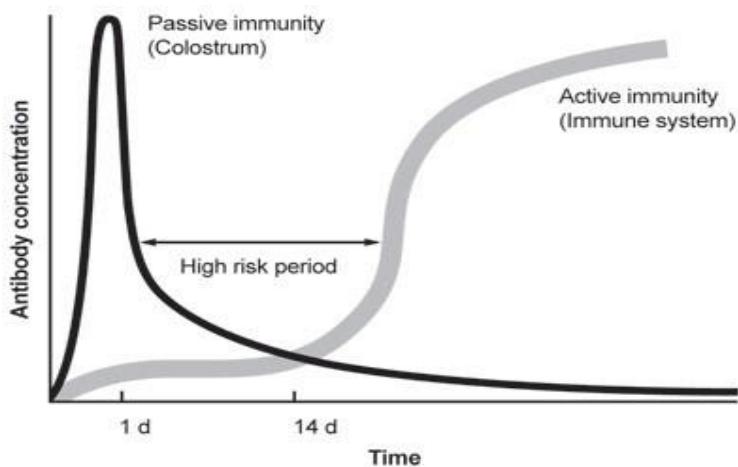
D. Which of the fruits P, Q, R or S is a true fruit with seeds? Give reason. (1)

30

The graph below shows the Antibody concentration in young calves. Study the graph and answer the questions that follow:

4

4



A. What do you think is the difference between passive and active immunity in this case? (1)
 B. What happens to passive immunity as days go by and why? (1)

Attempt either subpart C or D.

C. What kind of trend does active immunity show and why?
OR
 D. What kind of immunity will be observed when a vaccine is administered to the calf and why? (2)

For visually impaired students

The antibody concentration in a young calf was studied. It was found that the antibodies derived from colostrum (passive immunity) decreased from day 1 to 14, while the antibodies derived from immune cells (active immunity) increased between day 1 to day 14 and remained steady thereafter.

A. What do you think is the difference between passive and active immunity in this case?
 B. What happens to passive immunity as days go by and why?

Attempt either subpart C or D.

C. What kind of trend does active immunity show and why?
OR
 D. What kind of immunity will be observed when a vaccine is administered to the calf and why?

Section - E

31 A. Construct a complete transcription unit with promoter and terminator on the basis of the hypothetical template strand given below. 5



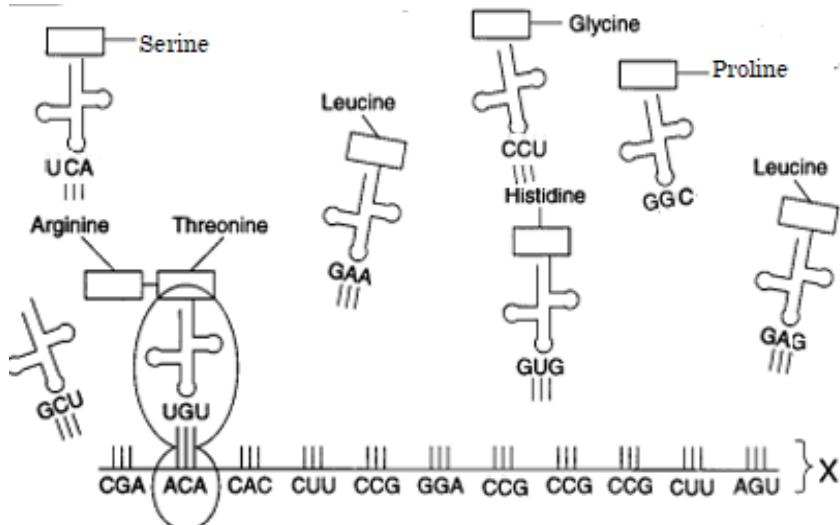
B. How is transcription a more complex process in eukaryotic cells? Explain the additional processes that a precursor mRNA has to undergo in these organisms.

For visually impaired students

A. Why are both the strands not copied during transcription?
B. How is transcription a more complex process in eukaryotic cells? Explain the additional processes that a precursor mRNA has to undergo in these organisms.

OR

A. Explain the process of aminoacylation of tRNA. Mention its role in translation.
B. How do ribosomes in the cells act as factories for protein synthesis?
C. Given below is a strand of mRNA undergoing the process of translation, what will be the sequence of Amino acids that will be translated? Name the triplet codons that should be added to bring to the end of translation at X.



For visually impaired students

C. Explain the phenomenon that forms the genetic basis to prove that codon is a triplet and it is read in a contiguous manner.

32 Some plant and animal pathogens serve as one of the tools of recombinant DNA (rDNA) technology.
A. Name one animal and one plant pathogen and discuss the pathogenic nature of both. State how they serve as a tool in rDNA technology.
B. What are the enzymes needed for rDNA technology?
C. A farmer owns a cotton farm land which is getting infested with coleopteran pests. He is not willing to use the microbes to protect his farm.
i. Name an alternate method to introduce the gene of interest the pathogen would have otherwise delivered and discuss how the alternate method would deliver the gene.
ii. State how this gene would control the pest.

5

OR

BamH1 is a restriction enzyme which recognizes the sequence- 5' - GGATCC - 3'. The restriction activity of this enzyme is between G and G.

- A. Construct the palindrome for the above sequence.
- B. Draw a labeled diagram to show the formation of recombinant DNA (rDNA) using BamH1.
- C. PBR322 is a plasmid that has a restriction site for this enzyme at the tetracycline resistant gene. If BamH1 were to be used, how will it impact the response of the transformant with rDNA to antibiotics- ampicillin and tetracycline. Justify.

33	<p>Justify the following statements with suitable proof/examples: -</p> <ol style="list-style-type: none">A. 'competition is not limited to closely related species'B. 'competition is not always dependent on resources being limiting'C. 'competitive exclusion occurs in nature'D. 'competing species may evolve mechanisms for co-existence'E. 'competition in nature comes from what is called 'competitive release" <p>OR</p> <ol style="list-style-type: none">A. How does a simple food chain exemplify the First Law of Thermodynamics?B. The table below shows the number of species in different parts of the world. <table border="1"><thead><tr><th>Name of Place</th><th>Number of Bird species</th></tr></thead><tbody><tr><td>Columbia</td><td>1400</td></tr><tr><td>India</td><td>1200</td></tr><tr><td>Northern South America</td><td>1300</td></tr><tr><td>New York</td><td>105</td></tr><tr><td>Denmark</td><td>504</td></tr></tbody></table> <p>Identify the common factor in regions with a higher number of bird species and suggest at least two reasons for this greater diversity.</p>	Name of Place	Number of Bird species	Columbia	1400	India	1200	Northern South America	1300	New York	105	Denmark	504	5
Name of Place	Number of Bird species													
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COMPUTER SCIENCE – Code No. 083
SAMPLE QUESTION PAPER*
Class - XII - (2025-26)

Time Allowed: 3 Hrs.

Maximum Marks: 70

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In-case of MCQ, text of the correct answer should also be written.

Q No.	Section-A (21 x 1 = 21 Marks)	Marks
1	State if the following statement is True or False: Using the statistics module, the output of the below statements will be 20: <pre>import statistics statistics.median([10, 20, 10, 30, 10, 20, 30])</pre>	1
2	What will be the output of the following code? <pre>L = ["India", "Incredible", "Bharat"] print(L[1][0] + L[2][-1])</pre> a) IT b) it c) It d) iT	1
3	Consider the given expression: <pre>print(19<11 and 29>19 or not 75>30)</pre> Which of the following will be the correct output of the given expression? a) True b) False c) Null d) No output	1
4	In SQL, which type of Join(s) may contain duplicate column(s)?	1
5	What will be the output of the following Python code? <pre>str= "Soft Skills" print(str[-3::-3])</pre> a) ISf b) Stkl c) StKi d) I	1
6	Write the output of the following Python code : <pre>for k in range(7,40,6): print (k + '-')</pre>	1
7	What will be the output of the following Python statement: <pre>print(10-3**2**2+144/12)</pre>	1
8	Consider the given SQL Query: <pre>SELECT department, COUNT(*) FROM employees HAVING COUNT(*) > 5 GROUP BY department;</pre>	1

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Saanvi is executing the query but not getting the correct output. Write the correction.		
9	<p>What will be the output of the following Python code?</p> <pre>try: x = 10 / 0 except Exception: print("Some other error!") except ZeroDivisionError: print("Division by zero error!")</pre> <p>a) Division by zero error! b) Some other error! c) ZeroDivisionError d) Nothing is printed</p>	1
10	<p>What will be the output of the following Python code?</p> <pre>my_dict = {"name": "Alicia", "age": 27, "city": "DELHI"} print(my_dict.get("profession", "Not Specified"))</pre> <p>a) Alicia b) DELHI c) None d) Not Specified</p>	1
11	<p>What possible output is expected to be displayed on the screen at the time of execution of the Python program from the following code?</p> <pre>import random L=[10,30,50,70] Lower=random.randint(2,2) Upper=random.randint(2,3) for K in range(Lower, Upper+1): print(L[K], end="@")</pre> <p>a) 50@70@ b) 90@ c) 10@30@50@ d) 10@30@50@70@</p>	1
12	<p>What will be the output of the following Python code?</p> <pre>i = 5 print(i,end='@ @') def add(): global i i = i+7 print(i,end='##') add() print(i)</pre> <p>a) 5@ @12##15 b) 5@ @5##12 c) 5@ @12##12 d) 12@ @12##12</p>	1
13	<p>Which SQL command can change the cardinality of an existing relation?</p> <p>a) Insert b) Delete c) Both a) & b) d) Drop</p>	1
14	<p>What is the output of the given Python code?</p> <pre>st='Waterskiing is thrilling!' print(st.split("i"))</pre> <p>a) ['Watersk', 'ng ', 's thr', 'll', 'ng!'] b) ['Watersk', ' ', 'ng ', 's thr', 'll', 'ng!'] c) ['Watersk', 'i', 'ng ', 's thr', 'll', 'ng!'] d) Error</p>	1
15	<p>In SQL, a relation consists of 5 columns and 6 rows. If 2 columns and 3 rows are added to the existing relation, what will be the updated degree of a relation?</p> <p>a) Degree: 7 b) Degree: 8 c) Degree: 9 d) Degree: 6</p>	1
16	<p>Which SQL command is used to remove a column from a table in MySQL?</p> <p>a) UPDATE b) ALTER c) DROP d) DELETE</p>	1

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17	_____ is a protocol used for retrieving emails from a mail server. a) SMTP b) FTP c) POP3 d) PPP	1
18	Which of the following is correct about using a Hub and Switch in a computer network? a) A hub sends data to all devices in a network, while a switch sends data to the specific device. b) A hub sends data only to the devices it is connected to, while a switch sends data to all devices in a network. c) A hub and switch function the same way and can be used interchangeably. d) A hub and switch are both wireless networking devices.	1
19	Which of the following is used to create the structure of a web page? a) CSS b) HTML c) JavaScript d) FTP	1

Q20 and Q21 are Assertion(A) and Reason(R) based questions. Mark the correct choice as:

- 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.

20	Assertion (A): The expression (1, 2, 3, 4).append(5) in Python will modify the original sequence datatype. Reason (R): The append() method adds an element to the end of a list and modifies the list in place.	1
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21	Assertion (A): A primary key must be unique and cannot have NULL values. Reasoning (R): The primary key uniquely identifies each row in the table.	1
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Q No.	Section-B (7 x 2=14 Marks)	Marks
22	<p>A. Explain the difference between explicit and implicit type conversion in Python with a suitable example.</p> <p style="text-align: center;">OR</p> <p>B. Explain the difference between break and continue statements in Python with a suitable example.</p>	2
23	<p>The code provided below is intended to remove the first and last characters of a given string and return the resulting string. However, there are syntax and logical errors in the code.</p> <p>Rewrite it after removing all the errors. Also, underline all the corrections made.</p> <pre>define remove_first_last(str): if len(str) < 2: return str new_str = str[1:-2] return new_str result = remove_first_last("Hello") Print("Resulting string: " result)</pre>	2
24	<p>A. (Answer using Python built-in methods/functions only):</p> <ol style="list-style-type: none"> I. Write a statement to find the index of the first occurrence of the substring "good" in a string named review. II. Write a statement to sort the elements of list L1 in descending order. 	2

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	OR B. Predict the output of the following Python code: text="Learn Python with fun and practice" print(text.partition("with")) print(text.count("a"))	
25	A. Write a function remove_element() in Python that accepts a list L and a number n. If the number n exists in the list, it should be removed. If it does not exist, print a message saying "Element not found". OR B. Write a Python function add_contact() that accepts a dictionary phone_book, a name, and a phone number. The function should add the name and phone number to the dictionary. If the name already exists, print " Contact already exists " instead of updating it.	2
26	Predict the output of the Python code given below : emp = {"Arv": (85000,90000), "Ria": (78000,88000), "Jay": (72000,80000), "Tia": (80000,70000)} selected = [] for name in emp: salary = emp[name] average = (salary[0] + salary[1]) / 2 if average > 80000: selected.append(name) print(selected)	2
27	A. Write suitable commands to do the following in MySQL. I. View the table structure. II. Create a database named SQP OR B. Differentiate between drop and delete query in SQL with a suitable example.	2
28	A. Define the following terms: I. Modem II. Gateway OR B. I. Expand the following terms: HTTP and FTP II. Differentiate between web server and web browser.	2
Q No.	Section-C (3 x 3 = 9 Marks)	Marks
29	A. Write a Python function that displays the number of times the word "Python" appears in a text file named "Prog.txt". OR B. Write and call a Python function to read lines from a text file STORIES.TXT and display those lines which doesn't start with a vowel (A, E, I, O, U) irrespective of their case.	3
30	A list containing records of products as L = [("Laptop", 90000), ("Mobile", 30000), ("Pen", 50), ("Headphones", 1500)] Write the following user-defined functions to perform operations on a stack named Product to:	3

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	<p>I. Push_element() – To push an item containing the product name and price of products costing more than 50 into the stack. Output: [('Laptop', 90000), ('Mobile', 30000), ('Headphones', 1500)]</p> <p>II. Pop_element() – To pop the items from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack. Output: ('Headphones', 1500) ('Mobile', 30000) ('Laptop', 90000) Stack Empty</p>																																									
31	<p>A. Predict the output of the following Python code:</p> <pre>s1="SQP-25" s2="" i=0 while i<len(s1): if s1[i]>='0' and s1[i]<='9': Num=int(s1[i]) Num-=1 s2=s2+str(Num) elif s1[i]>='A' and s1[i]<='Z': s2=s2+s1[i+1] else: s2=s2+'^' i+=1 print(s2)</pre> <p style="text-align: center;">OR</p> <p>B. Predict the output of the following Python code:</p> <pre>wildlife_sanctuary = ["Kaziranga", "Ranthambhore", "Jim Corbett", "Sundarbans", "Periyar", "Gir", "Bandipur"] output = [] for sanctuary in wildlife_sanctuary: if sanctuary[-1] in 'aeiou': output.append(sanctuary[0].upper()) print(output)</pre>	3																																								
Q No.	Section-D (4 x 4 = 16 Marks)	Marks																																								
32	<p>Consider the table SALES as given below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>sales_id</th><th>customer_name</th><th>product</th><th>quantity_sold</th><th>price</th></tr> </thead> <tbody> <tr><td>S001</td><td>John Doe</td><td>Laptop</td><td>5</td><td>50000</td></tr> <tr><td>S002</td><td>Jane Smith</td><td>Smartphone</td><td>10</td><td>30000</td></tr> <tr><td>S003</td><td>Michael Lee</td><td>Tablet</td><td>3</td><td>15000</td></tr> <tr><td>S004</td><td>Sarah Brown</td><td>Headphones</td><td>7</td><td>2000</td></tr> <tr><td>S005</td><td>Emily Davis</td><td>Smartwatch</td><td>8</td><td>8000</td></tr> <tr><td>S006</td><td>David</td><td>Smartwatch</td><td>3</td><td>16000</td></tr> <tr><td>S007</td><td>Mark</td><td>Tablet</td><td>5</td><td>34000</td></tr> </tbody> </table> <p>A. Write the following queries:</p> <ol style="list-style-type: none"> To display the total quantity sold for each product whose total quantity sold exceeds 12. To display the records of SALES table sorted by Product name in descending order. 	sales_id	customer_name	product	quantity_sold	price	S001	John Doe	Laptop	5	50000	S002	Jane Smith	Smartphone	10	30000	S003	Michael Lee	Tablet	3	15000	S004	Sarah Brown	Headphones	7	2000	S005	Emily Davis	Smartwatch	8	8000	S006	David	Smartwatch	3	16000	S007	Mark	Tablet	5	34000	4
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	<p>III. To display the distinct Product names from the SALES table. IV. To display the records of customers whose names end with the letter 'e'. OR B. Predict the output of the following:</p> <ol style="list-style-type: none"> SELECT * FROM Sales where product='Tablet'; SELECT sales_id, customer_name FROM Sales WHERE product LIKE 'S%'; SELECT COUNT(*) FROM Sales WHERE product in ('Laptop', 'Tablet'); SELECT AVG(price) FROM Sales where product='Tablet'; 																																																																										
33	<p>Raj is the manager of a medical store. To keep track of sales records, he has created a CSV file named Sales.csv, which stores the details of each sale.</p> <p>The columns of the CSV file are: Product_ID, Product_Name, Quantity_Sold and Price_Per_Unit.</p> <p>Help him to efficiently maintain the data by creating the following user-defined functions:</p> <ol style="list-style-type: none"> Accept() – to accept a sales record from the user and add it to the file Sales.csv. CalculateTotalSales() – to calculate and return the total sales based on the Quantity_Sold and Price_Per_Unit. 	4																																																																									
34	<p>Pranav is managing a Travel Database and needs to access certain information from the Hotels and Bookings tables for an upcoming tourism survey. Help him extract the required information by writing the appropriate SQL queries as per the tasks mentioned below:</p> <p>Table: Hotels</p> <table border="1"> <thead> <tr> <th>H_ID</th> <th>Hotel_Name</th> <th>City</th> <th>Star_Rating</th> </tr> </thead> <tbody> <tr><td>1</td><td>Hotel1</td><td>Delhi</td><td>5</td></tr> <tr><td>2</td><td>Hotel2</td><td>Mumbai</td><td>5</td></tr> <tr><td>3</td><td>Hotel3</td><td>Hyderabad</td><td>4</td></tr> <tr><td>4</td><td>Hotel4</td><td>Bengaluru</td><td>5</td></tr> <tr><td>5</td><td>Hotel5</td><td>Chennai</td><td>4</td></tr> <tr><td>6</td><td>Hotel6</td><td>Kolkata</td><td>4</td></tr> </tbody> </table> <p>Table: Bookings</p> <table border="1"> <thead> <tr> <th>B_ID</th> <th>H_ID</th> <th>Customer_Name</th> <th>Check_In</th> <th>Check_Out</th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td>Jiya</td><td>2024-12-01</td><td>2024-12-05</td></tr> <tr><td>2</td><td>2</td><td>Priya</td><td>2024-12-03</td><td>2024-12-07</td></tr> <tr><td>3</td><td>3</td><td>Alicia</td><td>2024-12-01</td><td>2024-12-06</td></tr> <tr><td>4</td><td>4</td><td>Bhavik</td><td>2024-12-02</td><td>2024-12-03</td></tr> <tr><td>5</td><td>5</td><td>Charu</td><td>2024-12-01</td><td>2024-12-02</td></tr> <tr><td>6</td><td>6</td><td>Esha</td><td>2024-12-04</td><td>2024-12-08</td></tr> <tr><td>7</td><td>6</td><td>Dia</td><td>2024-12-02</td><td>2024-12-06</td></tr> <tr><td>8</td><td>4</td><td>Sonia</td><td>2024-12-04</td><td>2024-12-08</td></tr> </tbody> </table>	H_ID	Hotel_Name	City	Star_Rating	1	Hotel1	Delhi	5	2	Hotel2	Mumbai	5	3	Hotel3	Hyderabad	4	4	Hotel4	Bengaluru	5	5	Hotel5	Chennai	4	6	Hotel6	Kolkata	4	B_ID	H_ID	Customer_Name	Check_In	Check_Out	1	1	Jiya	2024-12-01	2024-12-05	2	2	Priya	2024-12-03	2024-12-07	3	3	Alicia	2024-12-01	2024-12-06	4	4	Bhavik	2024-12-02	2024-12-03	5	5	Charu	2024-12-01	2024-12-02	6	6	Esha	2024-12-04	2024-12-08	7	6	Dia	2024-12-02	2024-12-06	8	4	Sonia	2024-12-04	2024-12-08	4
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8	4	Sonia	2024-12-04	2024-12-08																																																																							

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	<p>I. To display a list of customer names who have bookings in any hotel of 'Delhi' city.</p> <p>II. To display the booking details for customers who have booked hotels in 'Mumbai', 'Chennai', or 'Kolkata'.</p> <p>III. To delete all bookings where the check-in date is before 2024-12-03.</p> <p>IV. A. To display the Cartesian Product of the two tables. OR B. To display the customer's name along with their booked hotel's name.</p>																														
35	<p>MySQL database named WarehouseDB has a product_inventory table in MySQL which contains the following attributes:</p> <ul style="list-style-type: none"> • Item_code: Item code (Integer) • Product_name: Name of product (String) • Quantity: Quantity of product (Integer) • Cost: Cost of product (Integer) <p>Consider the following details to establish Python-MySQL connectivity:</p> <ul style="list-style-type: none"> • Username: admin_user • Password: warehouse2024 • Host: localhost <p>Write a Python program to change the Quantity of the product to 91 whose Item_code is 208 in the product_inventory table.</p>	4																													
Q No.	Section-E (2 X 5 = 10 Marks)	Marks																													
36	<p>Mr. Ravi, a manager at a tech company, needs to maintain records of employees. Each record should include: Employee_ID, Employee_Name, Department and Salary.</p> <p>Write the Python functions to:</p> <ol style="list-style-type: none"> Input employee data and append it to a binary file. Update the salary of employees in the "IT" department to 200000. 	2+3																													
37	<p>XYZNova Inc. is planning a new campus in Hyderabad while maintaining its headquarters in Bengaluru. The campus will have four buildings: HR, Finance, IT, and Logistics. As a network expert, you are tasked with proposing the best network solutions for their needs based on the following:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>From</th> <th>To</th> <th>Distance (in meters)</th> </tr> </thead> <tbody> <tr> <td>HR</td> <td>Finance</td> <td>50</td> </tr> <tr> <td>HR</td> <td>IT</td> <td>175</td> </tr> <tr> <td>HR</td> <td>Logistics</td> <td>90</td> </tr> <tr> <td>Finance</td> <td>IT</td> <td>60</td> </tr> <tr> <td>Finance</td> <td>Logistics</td> <td>70</td> </tr> <tr> <td>IT</td> <td>Logistics</td> <td>60</td> </tr> </tbody> </table> <p>Number of Computers in Each Block:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Block</th> <th>Number of Computers</th> </tr> </thead> <tbody> <tr> <td>HR</td> <td>60</td> </tr> <tr> <td>Finance</td> <td>40</td> </tr> <tr> <td>IT</td> <td>90</td> </tr> </tbody> </table>	From	To	Distance (in meters)	HR	Finance	50	HR	IT	175	HR	Logistics	90	Finance	IT	60	Finance	Logistics	70	IT	Logistics	60	Block	Number of Computers	HR	60	Finance	40	IT	90	5
From	To	Distance (in meters)																													
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Block	Number of Computers																														
HR	60																														
Finance	40																														
IT	90																														

*Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current session i.e. 2025-26.

- I. Suggest the best location for the server in the Hyderabad campus and explain your reasoning.
- II. Suggest the placement of the following devices:
a) Repeater b) Switch
- III. Suggest and draw a cable layout of connections between the buildings inside the campus.
- IV. The organisation plans to provide a high-speed link with its head office using a wired connection. Which of the cables will be most suitable for this job?
- V. A. What is the use of VoIP?
OR
B. Which type of network (PAN, LAN, MAN, or WAN) will be formed while connecting the Hyderabad campus to Bengaluru Headquarters?

PHYSICAL EDUCATION (048)

Sample Question Paper

Class XII (2025-26)

TIME ALLOWED: 3 HRS

MAX MARKS: 70

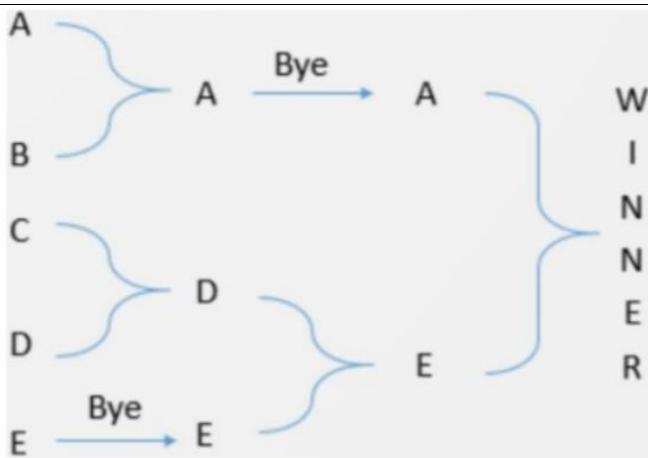
GENERAL INSTRUCTIONS:

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

Q4.	<p>What is nutrition?</p> <p>(a) Essential substances of food like proteins, fats, carbohydrates, etc. (b) Consuming correct ratio of nutrients (c) Dynamic process in which consumed food is digested (d) Both (a) and (b)</p>	[1]				
Q5.	<p>Identify the yoga asana below.</p>  <p>(a) Uttana Mandukasana (b) Paschim tan asana (c) Dhanu asana (d) Hal asana</p>	[1]				
Q6.	<p>Which of the following is a yoga pose for treatment of obesity?</p> <p>(a) Gomulka asana (b) Bhujang asana (c) Paschim tan asana (d) Vajrayana</p>	[1]				
Q7.	<p>Who are the participants in Special Olympics?</p> <p>(a) Veterans (b) Children and adults with intellectual disabilities (c) Physically handicapped (d) Both (b) and (c)</p>	[1]				
Q8.	<p>Female Athlete Triad does not include _____.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">(a) Amenorrhea</td> <td style="width: 50%;">(b) Oligomenorrhea</td> </tr> <tr> <td>(c) Osteoporosis</td> <td>(d) Bulimia Nervosa</td> </tr> </table>	(a) Amenorrhea	(b) Oligomenorrhea	(c) Osteoporosis	(d) Bulimia Nervosa	[1]
(a) Amenorrhea	(b) Oligomenorrhea					
(c) Osteoporosis	(d) Bulimia Nervosa					
Q9.	<p>Find the odd one out.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">(a) Calcium</td> <td style="width: 50%;">(b) Sulfur</td> </tr> <tr> <td>(c) Potassium</td> <td>(d) Iron</td> </tr> </table>	(a) Calcium	(b) Sulfur	(c) Potassium	(d) Iron	[1]
(a) Calcium	(b) Sulfur					
(c) Potassium	(d) Iron					
Q10.	<p>What is the dimension of layout in Johnsen-Methney Test of Motor Educability?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">(a) 15×3 feet</td> <td style="width: 50%;">(b) 15×3 meters</td> </tr> <tr> <td>(c) 15×2 feet</td> <td>(d) 15×2 meters</td> </tr> </table>	(a) 15×3 feet	(b) 15×3 meters	(c) 15×2 feet	(d) 15×2 meters	[1]
(a) 15×3 feet	(b) 15×3 meters					
(c) 15×2 feet	(d) 15×2 meters					

Q11.	<p>Which of the following is not a short-term effect of exercise on muscular system?</p> <ul style="list-style-type: none"> (a) Accumulation of lactate (b) Increased blood supply (c) Muscular hypertrophy (d) Increased muscle temperature 	[1]
Q12.	<p>Which of these is not a soft tissue injury?</p> <ul style="list-style-type: none"> (a) Abrasion (b) Dislocation (c) Strain (d) Incision 	[1]
Q13.	<p>Which of the following helps with ice skating?</p> <ul style="list-style-type: none"> (a) Rolling friction (b) Sliding friction (c) Static friction (d) Gliding friction 	[1]
Q14.	<p>Which of the following is NOT the factor effecting projectile trajectory?</p> <ul style="list-style-type: none"> (a) Gravity (b) Angle of release (c) Buoyant force (d) Air resistance 	[1]
Q15.	<p>Self-talk refers to our _____ consisting of statements we say to ourselves, either in our mind or out loud.</p> <ul style="list-style-type: none"> (a) Internal thoughts (b) Internal behavior (c) Internal soul (d) Internal emotions 	[1]
Q16.	<p>Assertion (A): Aggression is part of human behavior and is necessary for an individual to live and struggle for higher achievements.</p> <p>Reason (R): Aggression is inevitable and inseparable in sport activities.</p> <p>In the context of the above two statements, which one of the following is correct?</p> <ul style="list-style-type: none"> (a) (A) is false, but (R) is true. (b) (A) is true, but (R) is false. (c) Both (A) and (R) are true and (R) is the correct explanation of (A). (d) Both (A) and (R) are true, but (R) is not the correct explanation of (A). 	[1]
Q17.	<p>The method of training that involves repeated bouts of high-intensity work followed by periods of rest or low-intensity activity is known as _____.</p> <ul style="list-style-type: none"> (a) Continuous Training (b) Interval Training (c) Fartlek Training (d) Circuit Training 	[1]
Q18.	<p>Which of the following is not a type of coordinative ability?</p> <ul style="list-style-type: none"> (a) Orientation Ability (b) Acceleration Ability (c) Grouping Ability (d) Dynamic Ability 	[1]

Q19.	Differentiate between the three types of spinal deformity	[2]
Q20.	What is a balanced diet? Mention its importance also. [1+1]	[2]
Q21.	A male student performed the Harvard Step Test for 4 minutes. His pulse was recorded during the recovery periods as 58 beats in the first half-minute, 50 beats in the second, and 42 beats in the third. Using the Harvard Step Test formula, calculate his Fitness Index and state whether his score falls in the Excellent, Good, or Average category.	[1½+½] [2]
Q22.	Enlist any four types of fracture.	½ * 4 [2]
Q23.	Write a short note on Sports Psychology.	[2]
Q24.	A football player wants to improve his acceleration and quick reaction during a match. Suggest two suitable training methods and justify how each will help improve his performance.	[1+1] [2]
Q25.	League tournament is a better way to judge the best team of the tournament. Comment.	[3]
Q26.	Discuss the exercise guidelines for different age groups.	[1+1+1] [3]
Q27.	Explain strategies to make Physical Activities Accessible for CWSN.	[3]
Q28.	Discuss the importance of pre, during and post competition diet in detail.	[1+1+1] [3]
Q29.	A gymnast maintains a handstand position on the balance beam, then performs a flip. Differentiate between the types of equilibrium shown and explain how they help in performance.	[1+2] [3]
Q30.	Describe personality. Explain dimensions of personality.	[1+2] [3]
Q31.	Read the following text carefully and answer the questions that follow: Competing in physical activities has been the natural tendency of humans. The competitions or tournaments are held according to the set rules and regulations. The success of the tournament depends upon suitable fixture	[4]



1. The method followed in drawing the fixture is:
 - a) Random method
 - b) Knock out method
 - c) League cum knockout method
 - d) League method
2. The number of matches played can be calculated by the formula ____.
 - a) $2N$
 - b) $N+1$
 - c) $N/2$
 - d) $N - 1$
3. What is the advantage of this tournament?
 - a) More matches are played
 - b) Less number of teams participate
 - c) The knockout tournament takes less time and is economical
 - d) All teams play equal number of matches
4. What is the term used if privilege is given to a team to play at a higher round?
 - a) Bye
 - b) Draw
 - c) Super seeding
 - d) Any of the above

Q32. **Based on the picture given below, answer the following questions.** [4]



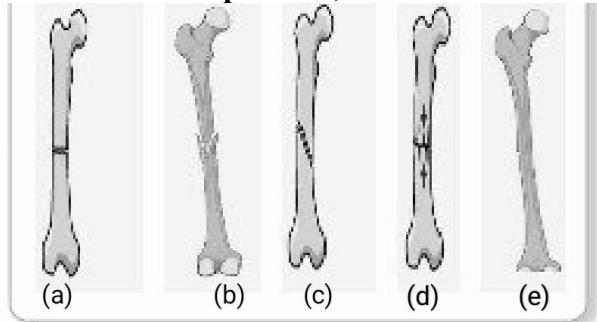
1. Identify the logo.
 - (a) Special Olympics
 - (b) Paralympics
 - (c) Deaflympics
 - (d) Special Olympics Bharat
2. What does the circle signify?

(a) Unity (b) Ears
 (c) Strength (d) Iris

3. In which year was it held for the first time?
 (a) 2001 (b) 1924 (c) 1948 (d) 1968

4. What are the four colours in the logo?
 (a) Red, Yellow, Black, Blue
 (b) Red, Blue, Green, Yellow
 (c) Yellow, Black, Red, Green
 (d) Brown, Blue, Green, Red

Q33. In relation to the pictures, answer the following questions:



1. When the two ends of the injured bone enter into each other it is said to be.
 (a) Comminuted Fracture (b) Greenstick Fracture
 (c) Impacted Fracture (d) Transverse Fracture

2. _____ is a comminuted fracture.
 (a) (d) (b) (b)
 (c) (e) (d) (a)

3. When the bone is broken into many pieces at one place or different places, it is called.
 (a) Oblique Fracture
 (b) Impacted Fracture
 (c) Comminuted Fracture
 (d) Greenstick Fracture

4. _____ fracture occurs in a straight line at a right angle to the shaft of the bone.
 Usually caused by a direct blow
 (a) Greenstick Fracture
 (b) Oblique Fracture
 (c) Transverse Fracture
 (d) Impacted Fracture

[4]

(Question for Visually Impaired)

Vitamins and minerals are essential nutrients which protect us from various diseases and are helpful for general development of the body.

1. _____ is a group of 8 water-soluble vitamins which are important for cellular metabolism.:

	<p>a) Vitamin A b) Vitamin K c) Vitamin B d) Vitamin D</p> <p>2. _____ disease is caused due to lack of Vitamin B. a) Anemia b) Kwashiorkor c) Scurvy d) Beri Beri</p> <p>3. Vitamin _____ is important for healthy bones and teeth. a) K b) A c) D d) C</p> <p>4. Vitamin _____ is needed for blood clotting a) A b) D c) K d) E</p>	
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Q34.	What do you mean by Asthma. Mention its symptoms. Explain the procedure, benefits and contraindications of an asana beneficial for the patient of arthritis.	[1+2+2] [5]
Q35.	Make a table of test items listed under fitness test by SAI (Age group 9-18 yrs) Explain the Procedure and Scoring of 50 MTS Run and Partial Curl Up	[1+2+2] [5]
Q36.	What do you understand by circuit training? How will a coach plan circuit training sessions with 6 stations to develop the fitness of his new trainees? Explain.	[1+4] [5]
Q37.	What is a lever? Discuss the application of Lever in sports.	[2+3] [5]

SAMPLE QUESTION PAPER

Class XII (2025-26)

TIME 3 HOURS

MAX. MARKS 80

GENERAL INSTRUCTIONS:

1. This question paper contains 34 questions. All questions are compulsory.
2. This question paper is divided into two parts, Part A and B.
3. Part - A is compulsory for all candidates.
4. Part - B has two options i.e. (i) Analysis of Financial Statements and (ii) Computerised Accounting. Students must attempt **only one** of the given options.
5. Question 1 to 16 and 27 to 30 carries 1 mark each.
6. Questions 17 to 20, 31 and 32 carries 3 marks each.
7. Questions from 21, 22 and 33 carries 4 marks each
8. Questions from 23 to 26 and 34 carries 6 marks each
9. There is no overall choice. However, an internal choice has been provided in 7 questions of **one mark**, 2 questions of **three marks**, 1 question of **four marks** and 2 questions of **six marks**.

Part - A

S.N o.		Marks								
	Part A :- Accounting for Partnership Firms and Companies									
1.	<p>A partner's capital account was credited with ₹80,000 during the year. Which of the following can be the possibility for such a credit in his capital account?</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A. Opening Balance</td> <td>B. Drawings during the year</td> </tr> <tr> <td>C. Loss during the year</td> <td>D. Capital introduced</td> </tr> </table> <p style="text-align: center;">OR</p> <p>Assertion (A) :- Fluctuating Capital Account can show debit balance.</p> <p>Reason (R) :- Losses and Drawings can be more than Capital Balance.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A. Both A and R are correct and R is the correct explanation of A</td> </tr> <tr> <td>B. Both A and R are correct but R is not the correct explanation of A</td> </tr> <tr> <td>C. A is correct but R is incorrect</td> </tr> <tr> <td>D. Both A and R are incorrect.</td> </tr> </table>	A. Opening Balance	B. Drawings during the year	C. Loss during the year	D. Capital introduced	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 correct but R is incorrect	D. Both A and R are incorrect.	1
A. Opening Balance	B. Drawings during the year									
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C. A is correct but R is incorrect										
D. Both A and R are incorrect.										
2.	<p>On 1st July, 2024, A, B and C entered into partnership sharing Profits & Losses in the ratio 5:3:2. C was guaranteed that his share of profits will not be less than ₹ 60,000 p.a. Deficiency if any will be borne by A and B equally. For the year ended March 31, 2025, firm incurred loss of ₹ 1,25,000. Deficiency will be borne by A and B will be:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A. A ₹ 30,000 and B ₹ 30,000</td> <td>B. A ₹ 43,750 and B ₹ 26,250</td> </tr> <tr> <td>C. A ₹ 42,500 and B ₹ 42,500</td> <td>D. A ₹ 35,000 and B ₹ 35,000</td> </tr> </table>	A. A ₹ 30,000 and B ₹ 30,000	B. A ₹ 43,750 and B ₹ 26,250	C. A ₹ 42,500 and B ₹ 42,500	D. A ₹ 35,000 and B ₹ 35,000	1				
A. A ₹ 30,000 and B ₹ 30,000	B. A ₹ 43,750 and B ₹ 26,250									
C. A ₹ 42,500 and B ₹ 42,500	D. A ₹ 35,000 and B ₹ 35,000									
3.	<p>Pali Limited offered 2,00,000 shares of ₹ 10 each at a premium of ₹ 2 per share. Applications were received for 1,95,000 shares, which were duly allotted. The amount was payable as ₹3 on Application (including ₹1 premium), ₹ 6 on Allotment (including ₹1 premium) and balance on call. Manoj, holding 6,000 shares failed to pay allotment money and his shares were</p>	1								

	<p>immediately forfeited. Out of the forfeited shares, 4,000 shares were re-issued @ ₹ 11 per share as fully paid up. The amount of Capital Reserve will be:</p> <table border="1"> <tr> <td>A. ₹ 16,000</td><td>B. ₹ 12,000</td><td>C. ₹ 8,000</td><td>D. ₹ 18,000</td></tr> </table> <p>OR</p> <p>Prafful Limited forfeited 15,000 shares of ₹ 20 each on which ₹ 8 (including ₹ 2 premium) was paid. Out of these 13,000 shares were re-issued @ ₹ 19 per share as fully paid up. Determine the amount of Share Forfeited balance.</p> <table border="1"> <tr> <td>A. ₹ 90,000</td><td>B. ₹ 91,000</td><td>C. ₹ 12,000</td><td>D. ₹ 16,000</td></tr> </table>	A. ₹ 16,000	B. ₹ 12,000	C. ₹ 8,000	D. ₹ 18,000	A. ₹ 90,000	B. ₹ 91,000	C. ₹ 12,000	D. ₹ 16,000	
A. ₹ 16,000	B. ₹ 12,000	C. ₹ 8,000	D. ₹ 18,000							
A. ₹ 90,000	B. ₹ 91,000	C. ₹ 12,000	D. ₹ 16,000							
4.	<p>Pista Ltd. took over running business of Vista Ltd. comprising of Assets of ₹ 45,00,000 and Liabilities of ₹ 7,50,000 and in consideration issued them 30,000, 9% debentures of ₹ 100 each at 5% discount and a cheque of ₹ 10,00,000. Determine the amount of Goodwill or Capital Reserve.</p> <table border="1"> <tr> <td>A. Goodwill ₹ 9,00,000</td><td>B. Capital Reserve ₹ 9,00,000</td></tr> <tr> <td>C. Goodwill ₹ 1,00,000</td><td>D. Capital Reserve ₹ 1,00,000</td></tr> </table> <p>OR</p> <p>Dawn Ltd. purchased Equipment and paid ₹ 2,20,000 by cheque and issued 16,000 equity shares of ₹ 10 each at 25% premium. The purchase consideration will be:</p> <table border="1"> <tr> <td>A. ₹ 3,40,000</td><td>B. ₹ 4,20,000</td><td>C. ₹ 3,80,000</td><td>D. ₹ 2,00,000</td></tr> </table>	A. Goodwill ₹ 9,00,000	B. Capital Reserve ₹ 9,00,000	C. Goodwill ₹ 1,00,000	D. Capital Reserve ₹ 1,00,000	A. ₹ 3,40,000	B. ₹ 4,20,000	C. ₹ 3,80,000	D. ₹ 2,00,000	1
A. Goodwill ₹ 9,00,000	B. Capital Reserve ₹ 9,00,000									
C. Goodwill ₹ 1,00,000	D. Capital Reserve ₹ 1,00,000									
A. ₹ 3,40,000	B. ₹ 4,20,000	C. ₹ 3,80,000	D. ₹ 2,00,000							
5.	<p>Bala and Lala were partners in a firm with Capitals of ₹ 24,00,000 and 16,00,000. They admitted Mala as a new partner for 1/3 share for which Mala brings ₹ 20,00,000 as capital. There was Investment and Investment Fluctuation Reserve appearing in the books of ₹ 2,50,000 and ₹ 50,000 respectively. Bala took over 40% of the Investments at ₹ 80,000 and remaining Investments were valued at ₹ 1,10,000. By what amount Revaluation account will be affected for the above information?</p> <table border="1"> <tr> <td>A. Debited ₹ 60,000</td><td>B. Credited with ₹ 60,000</td></tr> <tr> <td>C. Debited ₹ 10,000</td><td>D. Credited ₹ 10,000</td></tr> </table>	A. Debited ₹ 60,000	B. Credited with ₹ 60,000	C. Debited ₹ 10,000	D. Credited ₹ 10,000	1				
A. Debited ₹ 60,000	B. Credited with ₹ 60,000									
C. Debited ₹ 10,000	D. Credited ₹ 10,000									
6.	<p>Jai and Veeru were in a partnership sharing Profit & Loss in the ratio 5:3. Their Capitals were ₹ 10,00,000 and ₹ 8,00,000 respectively. The firm was also having reserves of ₹ 7,00,000. Normal rate of return was 10%. Firm made average profits of ₹ 2,30,000 for the year ended March 31, 2025 (after adjustment of loss of machinery of book value of ₹ 2,00,000 by fire against which insurance claim of ₹ 1,50,000 was admitted). Value of goodwill as per Capitalisation of super profits will be:</p> <table border="1"> <tr> <td>A. ₹ 10,00,000</td><td>B. ₹ 3,00,000</td><td>C. ₹ 18,00,000</td><td>D. Nil.</td></tr> </table>	A. ₹ 10,00,000	B. ₹ 3,00,000	C. ₹ 18,00,000	D. Nil.	1				
A. ₹ 10,00,000	B. ₹ 3,00,000	C. ₹ 18,00,000	D. Nil.							
7.	<p>On 1st August, 2024 Tom, Jerry and Tyke entered into partnership with capitals of ₹ 5,00,000 each. Interest on Drawings was to be charged @ 6% p.a. For the year ended March 31, 2025, Tyke withdrew ₹ 80,000. What amount of Interest on drawings will be charged from Tyke?</p> <table border="1"> <tr> <td>A. ₹ 4,800</td><td>B. ₹ 1,600</td><td>C. ₹ 3,200</td><td>D. ₹ 2,400</td></tr> </table>	A. ₹ 4,800	B. ₹ 1,600	C. ₹ 3,200	D. ₹ 2,400	1				
A. ₹ 4,800	B. ₹ 1,600	C. ₹ 3,200	D. ₹ 2,400							
8.	<p>A, B and C were partners sharing Profits & Losses in the ratio 7:2:1. B died. A took over 1/20 from his share and remaining share was taken over by C. Determine the new Profit sharing Ratio.</p> <table border="1"> <tr> <td>A. 4 : 1</td><td>B. 7 : 1</td><td>C. 71 : 29</td><td>D. 3 : 1</td></tr> </table> <p>OR</p> <p>X, Y and Z were partners sharing Profit & Losses in the ratio 5:3:2. Y retired, and he gifted half of his share to X and remaining half was taken over equally by X and Z. Determine the new Profit-sharing Ratio.</p> <table border="1"> <tr> <td>A. 29 : 11</td><td>B. 13 : 7</td><td>C. 1 : 1</td><td>D. 5 : 2</td></tr> </table>	A. 4 : 1	B. 7 : 1	C. 71 : 29	D. 3 : 1	A. 29 : 11	B. 13 : 7	C. 1 : 1	D. 5 : 2	1
A. 4 : 1	B. 7 : 1	C. 71 : 29	D. 3 : 1							
A. 29 : 11	B. 13 : 7	C. 1 : 1	D. 5 : 2							

9.	X, a partner was assigned to look after the dissolution process and was allowed remuneration of ₹ 15,000. Actual realisation expenses amounted to ₹ 20,000, being paid by another partner Y. By what amount Realisation account will be debited for the above-mentioned information? <table border="1"> <tr> <td>A. ₹ 20,000</td><td>B. ₹ 35,000</td><td>C. ₹ 5,000</td><td>D. ₹ 15,000</td></tr> </table>				A. ₹ 20,000	B. ₹ 35,000	C. ₹ 5,000	D. ₹ 15,000	1
A. ₹ 20,000	B. ₹ 35,000	C. ₹ 5,000	D. ₹ 15,000						
10.	Arun and Barun were partners sharing Profits &Losses in the ratio 3:2. They admitted Charan into partnership for 20% share. Charan was to bring proportionate Capital and he brought ₹ 3,50,000 (including ₹ 50,000 for goodwill share) in firm. If adjusted capital of Arun after Revaluation Gain/Loss, Accumulated Profits/Losses and Goodwill treatment was ₹ 8,40,000. What was Barun's Capital after Revaluation Gain/Loss, Accumulated Profits/Losses and Goodwill treatment? <table border="1"> <tr> <td>A. ₹ 5,60,000</td><td>B. ₹ 3,60,000</td><td>C. ₹ 12,00,000</td><td>D. ₹ 6,60,000</td></tr> </table>				A. ₹ 5,60,000	B. ₹ 3,60,000	C. ₹ 12,00,000	D. ₹ 6,60,000	1
A. ₹ 5,60,000	B. ₹ 3,60,000	C. ₹ 12,00,000	D. ₹ 6,60,000						
OR									
Raghav and Sahil were partners sharing Profit &Loss in the ratio 5:3. Their capital balances were ₹ 7,20,000 and ₹ 2,80,000 respectively. There were balances of General Reserve of ₹ 5,00,000 and Deferred Revenue Expenditure of ₹ 4,00,000 in the books of the firm. They admitted Ojasv into partnership for 20% share for which he brings ₹ 4,00,000 as capital. Determine the goodwill share of Ojasv. <table border="1"> <tr> <td>A. ₹ 5,00,000</td><td>B. ₹ 1,00,000</td><td>C. ₹ 1,20,000</td><td>D. ₹ 60,000</td></tr> </table>						A. ₹ 5,00,000	B. ₹ 1,00,000	C. ₹ 1,20,000	D. ₹ 60,000
A. ₹ 5,00,000	B. ₹ 1,00,000	C. ₹ 1,20,000	D. ₹ 60,000						
11.	Building was appearing in the books at ₹ 20,00,000 which was overvalued by 25%. What amount will be shown in the Balance Sheet of a reconstituted firm for building? <table border="1"> <tr> <td>A. ₹ 25,00,000</td><td>B. ₹ 16,00,000</td><td>C. ₹ 24,00,000</td><td>D. ₹ 15,00,000</td></tr> </table>				A. ₹ 25,00,000	B. ₹ 16,00,000	C. ₹ 24,00,000	D. ₹ 15,00,000	1
A. ₹ 25,00,000	B. ₹ 16,00,000	C. ₹ 24,00,000	D. ₹ 15,00,000						
From the given hypothetical situation, answer Q 12 – 14.									
Floater Ltd. issued 60,000; 8% debentures of ₹ 100 each at 5% Discount and to be redeemed at 10% premium at the end of 5 years. On the date of issue, balance in Securities Premium was ₹ 8,00,000 and Statement of Profit Loss (Dr.) was ₹ 5,00,000.									
12.	Loss on Issue of Debentures is to be written off as _____ out of Securities Premium and _____ out of Statement of Profit and Loss. <table border="1"> <tr> <td>A. ₹ 4,50,000 ; ₹ 4,50,000</td><td>B. ₹ 6,00,000 ; ₹ 3,00,000</td></tr> <tr> <td>C. ₹ 8,00,000 ; ₹ 1,00,000</td><td>D. ₹ 4,00,000 ; ₹ 5,00,000</td></tr> </table>				A. ₹ 4,50,000 ; ₹ 4,50,000	B. ₹ 6,00,000 ; ₹ 3,00,000	C. ₹ 8,00,000 ; ₹ 1,00,000	D. ₹ 4,00,000 ; ₹ 5,00,000	1
A. ₹ 4,50,000 ; ₹ 4,50,000	B. ₹ 6,00,000 ; ₹ 3,00,000								
C. ₹ 8,00,000 ; ₹ 1,00,000	D. ₹ 4,00,000 ; ₹ 5,00,000								
13.	After writing off Loss on Issue of Debentures, _____ balance in Statement of Profit and Loss will be _____ <table border="1"> <tr> <td>A. Debit ; ₹ 6,00,000</td><td>B. Credit ; ₹ 6,00,000</td></tr> <tr> <td>C. Debit ; ₹ 4,00,000</td><td>D. Credit ; ₹ 4,00,000</td></tr> </table>				A. Debit ; ₹ 6,00,000	B. Credit ; ₹ 6,00,000	C. Debit ; ₹ 4,00,000	D. Credit ; ₹ 4,00,000	1
A. Debit ; ₹ 6,00,000	B. Credit ; ₹ 6,00,000								
C. Debit ; ₹ 4,00,000	D. Credit ; ₹ 4,00,000								
14.	Premium on Redemption of Debentures account will have a balance of _____ to be treated as _____ in the first year. <table border="1"> <tr> <td>A. ₹ 9,00,000 ; Non-Current Liabilities</td><td>B. ₹ 9,00,000 ; Current Liabilities</td></tr> <tr> <td>C. ₹ 6,00,000 ; Non-Current Liabilities</td><td>D. ₹ 6,00,000 ; Current Liabilities</td></tr> </table>				A. ₹ 9,00,000 ; Non-Current Liabilities	B. ₹ 9,00,000 ; Current Liabilities	C. ₹ 6,00,000 ; Non-Current Liabilities	D. ₹ 6,00,000 ; Current Liabilities	1
A. ₹ 9,00,000 ; Non-Current Liabilities	B. ₹ 9,00,000 ; Current Liabilities								
C. ₹ 6,00,000 ; Non-Current Liabilities	D. ₹ 6,00,000 ; Current Liabilities								
15.	Arun, Basu and Tarun were partners sharing Profit &Loss in the ratio 5:3:2. Their firm was dissolved on March 31, 2025. On this date following assets and liabilities were appearing in their books of accounts. Building ₹ 2,00,000 ; Furniture ₹ 80,000 ; Stock ₹ 70,000 ; Goodwill ₹ 10,000 ; Debtors ₹ 40,000 ; Cash ₹ 20,000 ; Creditors ₹ 50,000 ; Arun's Loan ₹ 60,000 ; Tarun's Brother Loan ₹ 30,000. Assets realised at for ₹ 3,40,000. Determine the amount of Realisation Gain/Loss.				1				

	<table border="1"> <tr> <td>A. Realisation Loss ₹ 80,000</td><td>B. Realisation Gain ₹ 60,000</td><td></td></tr> <tr> <td>C. Realisation Loss ₹ 60,000</td><td>D. No Gain or Loss on Realisation</td><td></td></tr> </table>	A. Realisation Loss ₹ 80,000	B. Realisation Gain ₹ 60,000		C. Realisation Loss ₹ 60,000	D. No Gain or Loss on Realisation		
A. Realisation Loss ₹ 80,000	B. Realisation Gain ₹ 60,000							
C. Realisation Loss ₹ 60,000	D. No Gain or Loss on Realisation							
16.	<p>John and Sourabh were partners sharing Profit &Loss equally. They decided to share future Profit &Loss in the ratio 3:2. Their manager Arya met with an accident in the office itself and his claim for compensation amounted to ₹. 50,000. The firm had a Workmen Compensation Reserve of ₹. 80,000. Which of the following statement holds true at the time of reconstitution?</p> <p>A. ₹ 50,000 will be provided as workmen claim out of Workmen Compensation Reserve and balance ₹ 30,000 will be distributed amongst partners in old ratio.</p> <p>B. ₹ 50,000 will be provided as workmen claim out of Workmen Compensation Reserve and balance ₹ 30,000 will be distributed amongst partners in new ratio.</p> <p>C. ₹ 50,000 will be provided as workmen claim out of Workmen Compensation Reserve and balance ₹ 30,000 will be credited to Revaluation Account.</p> <p>D. ₹ 50,000 will be provided as workmen claim out of Workmen Compensation Reserve and balance ₹ 30,000 will be carried forward in the books of the firm without any treatment.</p>	1						
17.	<p>Raju, Rinku and Munni were partners sharing Profits & Losses in the ratio 3:1:1. They admitted Chunni into partnership for 1/5 share. It was decided that Munni will have 1/4 share in future profits. Goodwill of the firm was valued at ₹ 3,20,000 and Chunni was unable to bring anything. Calculate New Ratio, Sacrificing Ratio and journalise for goodwill at the time of admission of Chunni.</p> <p style="text-align: center;">OR</p> <p>Yashasvi, Nitish and Harshit were partners sharing Profit &Loss in the ratio 5:3:2. W.e.f 01 April, 2025, they decided to share future Profit &Loss in the ratio 4:3:2. On the date of reconstitution Goodwill was appearing in the books of ₹ 4,00,000. Goodwill of the firm was valued at ₹ 7,20,000 on the date of reconstitution. Determine gain or sacrifice for each partner and pass necessary entries.</p>	3						
18.	<p>Hemant and Pankaj were partners sharing Profit & Loss in the ratio of 3:2. The firm was dissolved on March 31, 2024 and the following balances were appearing in the books of the firm.</p> <p>a. Hemant's Loan ₹ 80,000 b. Ruby's Loan ₹ 50,000 c. Creditors ₹ 1,00,000 d. Capital Balances after all adjustments – Hemant ₹ 1,60,000 and Pankaj - ₹ 1,40,000</p> <p>Assets of the firm realised at ₹ 6,00,000. You are required to show the amounts and order of payments as per section 48 of Indian Partnership Act 1932 at the time of Dissolution of the firm.</p>	3						
19.	<p>On January 01, 2025 Ritu Ltd. Issued ₹ 40,00,000, 8% Debentures of ₹ 100 each at 5% discount to be redeemed at 10% premium at the end of 5 years. Balance in Securities Premium on the date of such issue was of ₹ 2,70,000. Pass entries for Issue of debentures.</p>	3						
20.	<p>Ankur and Vikram were partners sharing Profits &Losses in the ratio 3:2. They decided to share future Profits & Losses equally. On the date of reconstitution there was Investment Fluctuation Reserve of ₹ 4,00,000 in the books of accounts. Pass entries in the following cases</p> <p>A. Value of Investment reduced by ₹ 2,50,000. B. Value of Investment increased by ₹ 5,00,000.</p>	3 (1+1.5+0.5)						

	C. There was no change in value of investments.																																			
21.	<p>Sapphire Ltd. Was registered with an authorised capital of ₹ 80,00,000 divided into 4,00,000 shares of ₹ 20 each. Company offered and issued 1,50,000 shares at a premium of ₹ 4 per share payable as ₹ 7 on application (including ₹ 1 premium), ₹ 12 on allotment (including ₹ 2 premium) and balance on first call. Rancho, holding 10,000 shares failed to pay allotment and call money. Another shareholder Sultan holding 5,000 shares failed to pay the call money. All the shares held by Rancho were forfeited and of these 8,000 were reissued at ₹ 22 per share as fully paid.</p> <p>Show Share Capital sub head as it would in the Balance Sheet of Sapphire Ltd. along with notes to Account as per the Companies Act 2013.</p>	4																																		
22.	<p>Amit, Sumit and Pulkit were partners sharing Profit &Loss in the ratio 5:3:2. Their Capitals were ₹ 8,00,000; ₹ 7,00,000 and ₹ 5,00,000 respectively. According to Partnership Deed:-</p> <p>(a) Interest on Capital @ 10% p.a.</p> <p>(b) Salary to Amit ₹ 10,000 p.m and Pulkit ₹ 15,000 per quarter.</p> <p>(c) Commission to Sumit ₹ 70,000.</p> <p>(d) Sumit was being guaranteed that his share of profits will not be less than ₹ 65,000. Deficiency if any will be borne by Amit and Pulkit equally.</p> <p>Ignoring the above terms the profits of ₹ 6,00,000, for the year ended March 31, 2025 were divided equally between partners. You are required to pass necessary adjustment entry. Show your workings clearly.</p>	4																																		
23.	<p>Extract of Financial statements of Alexa Ltd are produced below.</p> <p style="text-align: center;">Balance Sheet (Extract)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Equity and Liabilities</th> <th style="text-align: left; padding: 2px;">Note no.</th> <th style="text-align: left; padding: 2px;">31-03-25</th> <th style="text-align: left; padding: 2px;">31-03-24</th> </tr> </thead> <tbody> <tr> <td style="text-align: left; padding: 2px;">Shareholders funds</td> <td></td> <td style="text-align: left; padding: 2px;">(₹)</td> <td style="text-align: left; padding: 2px;">(₹)</td> </tr> <tr> <td style="text-align: left; padding: 2px;">Equity Share capital</td> <td style="text-align: left; padding: 2px;">1</td> <td style="text-align: left; padding: 2px;">2,37,60,000</td> <td style="text-align: left; padding: 2px;">2,00,00,000</td> </tr> <tr> <td style="text-align: left; padding: 2px;">Reserves and Surplus</td> <td style="text-align: left; padding: 2px;">2</td> <td style="text-align: left; padding: 2px;">20,00,000</td> <td style="text-align: left; padding: 2px;">10,00,000</td> </tr> </tbody> </table> <p>Note No. 1 Share Capital</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Authorised Share Capital</th> <th style="text-align: left; padding: 2px;">31-03-25 (₹)</th> <th style="text-align: left; padding: 2px;">31-03-24 (₹)</th> </tr> </thead> <tbody> <tr> <td style="text-align: left; padding: 2px;">Equity shares of Rs.10 each</td> <td style="text-align: left; padding: 2px;">-----</td> <td style="text-align: left; padding: 2px;">-----</td> </tr> <tr> <td style="text-align: left; padding: 2px;">Issued Capital</td> <td style="text-align: left; padding: 2px;">2,37,60,000</td> <td style="text-align: left; padding: 2px;">2,00,00,000</td> </tr> <tr> <td style="text-align: left; padding: 2px;">Subscribed capital (Fully Paid)</td> <td style="text-align: left; padding: 2px;">2,37,60,000</td> <td style="text-align: left; padding: 2px;">2,00,00,000</td> </tr> </tbody> </table> <p>Note No. 2 Reserves and Surplus</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">31-03-25 (₹)</th> <th style="text-align: left; padding: 2px;">31-03-24 (₹)</th> </tr> </thead> <tbody> <tr> <td style="text-align: left; padding: 2px;">Securities Premium</td> <td style="text-align: left; padding: 2px;">20,00,000</td> </tr> <tr> <td style="text-align: left; padding: 2px;">10,00,000</td> <td></td> </tr> </tbody> </table> <p>During the year Alexa Ltd. purchased business of Gloria Ltd. with assets of Rs.50,00,000 and liabilities of Rs.20,00,000. With regards to the following additional Information:</p> <p>1) During the year 40,000 Equity Shares were issued at a premium of Rs.4 per share for cash.</p> <p>2) Besides this no shares were issued as sweat equity, bonus or as ESOP or in any other form.</p> <p>Give journal entries for issue of shares for cash and consideration other than cash. Also, prepare Share Capital A/c and Securities Premium Account in the books of Alexa Ltd.</p>	Equity and Liabilities	Note no.	31-03-25	31-03-24	Shareholders funds		(₹)	(₹)	Equity Share capital	1	2,37,60,000	2,00,00,000	Reserves and Surplus	2	20,00,000	10,00,000	Authorised Share Capital	31-03-25 (₹)	31-03-24 (₹)	Equity shares of Rs.10 each	-----	-----	Issued Capital	2,37,60,000	2,00,00,000	Subscribed capital (Fully Paid)	2,37,60,000	2,00,00,000	31-03-25 (₹)	31-03-24 (₹)	Securities Premium	20,00,000	10,00,000		6
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	on March 31, 2025. On this date his dues after all adjustments related to Revaluation Gain/Loss, Accumulated Profits/Losses and Goodwill treatment came out to be ₹ 6,40,000. He was paid ₹ 40,000 through Furniture on retirement and it was agreed to pay balance in three equal annual instalments together with interest as per the rate permissible by act, in the absence of any agreement. First instalment being paid on March 31, 2026. You are required to pass entry for immediate payment to Deepak on retirement and prepare Deepak's Loan Account till it is finally closed.																																																																																	
25.	<p>Dhwani and Iknoor were partners sharing Profits & Losses in the ratio 3:2. Their Balance Sheet on March 31, 2025 was as follows</p> <table border="1"> <thead> <tr> <th>Liabilities</th> <th>Amount (₹)</th> <th>Assets</th> <th>Amount (₹)</th> </tr> </thead> <tbody> <tr> <td>Dhwani's Capital</td> <td>2,40,000</td> <td>Cash in Hand</td> <td>50,000</td> </tr> <tr> <td>Iknoor's Capital</td> <td>2,60,000</td> <td>Building</td> <td>3,00,000</td> </tr> <tr> <td>Investment Fluctuation Reserve</td> <td>50,000</td> <td>Debtors 80,000 (-) Prov for Doubtful Debts (8,000)</td> <td>72,000</td> </tr> <tr> <td>Employee Provident Fund</td> <td>50,000</td> <td></td> <td></td> </tr> <tr> <td>General Reserve</td> <td>60,000</td> <td>Stock</td> <td>88,000</td> </tr> <tr> <td>Creditors</td> <td>40,000</td> <td>Accrued Income</td> <td>20,000</td> </tr> <tr> <td>Bills Payable</td> <td>30,000</td> <td>Profit and Loss</td> <td>1,00,000</td> </tr> <tr> <td>Bank Overdraft</td> <td>20,000</td> <td>Investment</td> <td>1,20,000</td> </tr> <tr> <td></td> <td>7,50,000</td> <td></td> <td>7,50,000</td> </tr> </tbody> </table> <p>On the above date, they admitted Ishaya into partnership for 25% share. Ishaya brings ₹ 2,50,000 as capital and ₹ 40,000 for goodwill. Goodwill of the firm was valued at ₹ 2,00,000. Following agreements were agreed upon:-</p> <ul style="list-style-type: none"> a) Bad Debts amounted to ₹ 5,000 and Provision for doubtful debts to be created at same existing rate. b) Investments were valued at ₹ 1,00,000. c) Accrued Income was recovered only of ₹ 14,500 in settlement. d) Building was overvalued by 20%. e) Capital of Dhwani and Iknoor were to be adjusted on the basis Ishaya's capital contribution. Necessary adjustment to be done by opening Current Accounts. <p>You are required to prepare Revaluation Account and Partner's Capital Account at the time of admission of partner.</p> <p style="text-align: center;">OR</p> <p>Aman, Barman and Raman were partners sharing Profits & Losses in the ratio 5:3:2. Their Balance Sheet on March 31, 2025 was as follows</p> <table border="1"> <thead> <tr> <th>Liabilities</th> <th>Amount (₹)</th> <th>Assets</th> <th>Amount (₹)</th> </tr> </thead> <tbody> <tr> <td>Aman's Capital</td> <td>80,000</td> <td>Bank</td> <td>30,000</td> </tr> <tr> <td>Barman's Capital</td> <td>70,000</td> <td>Building</td> <td>1,00,000</td> </tr> <tr> <td>Raman's Capital</td> <td>50,000</td> <td>Furniture</td> <td>60,000</td> </tr> <tr> <td>Workmen Compensation Reserve</td> <td>50,000</td> <td>Debtors</td> <td>50,000</td> </tr> <tr> <td>Accumulated Depreciation on Building</td> <td>20,000</td> <td>Stock</td> <td>40,000</td> </tr> <tr> <td>Profit and Loss</td> <td>40,000</td> <td>Prepaid Expenses</td> <td>20,000</td> </tr> <tr> <td>Creditors</td> <td>25,000</td> <td>Deferred Revenue Exp.</td> <td>20,000</td> </tr> <tr> <td>Outstanding Expenses</td> <td>15,000</td> <td>Goodwill</td> <td>30,000</td> </tr> <tr> <td></td> <td>3,50,000</td> <td></td> <td>3,50,000</td> </tr> </tbody> </table>	Liabilities	Amount (₹)	Assets	Amount (₹)	Dhwani's Capital	2,40,000	Cash in Hand	50,000	Iknoor's Capital	2,60,000	Building	3,00,000	Investment Fluctuation Reserve	50,000	Debtors 80,000 (-) Prov for Doubtful Debts (8,000)	72,000	Employee Provident Fund	50,000			General Reserve	60,000	Stock	88,000	Creditors	40,000	Accrued Income	20,000	Bills Payable	30,000	Profit and Loss	1,00,000	Bank Overdraft	20,000	Investment	1,20,000		7,50,000		7,50,000	Liabilities	Amount (₹)	Assets	Amount (₹)	Aman's Capital	80,000	Bank	30,000	Barman's Capital	70,000	Building	1,00,000	Raman's Capital	50,000	Furniture	60,000	Workmen Compensation Reserve	50,000	Debtors	50,000	Accumulated Depreciation on Building	20,000	Stock	40,000	Profit and Loss	40,000	Prepaid Expenses	20,000	Creditors	25,000	Deferred Revenue Exp.	20,000	Outstanding Expenses	15,000	Goodwill	30,000		3,50,000		3,50,000	6
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	3,50,000		3,50,000																																																																															

	<p>On the above date Barman retired and his share was acquired by Aman and Raman equally. Following agreements were agreed upon:-</p> <ul style="list-style-type: none"> a) Create Provision for doubtful debts @ 10%. b) Market value of Building is ₹1,00,000 and Furniture was overvalued by 20%. c) Stock was valued at ₹ 55,000. Creditors of ₹ 15,000 took over stock of ₹ 10,000 in settlement of their claims. d) Goodwill of the firm was valued at ₹ 80,000. e) Prepaid Expenses are worthless and Outstanding Expenses are now ₹20,000. f) ₹ 20,000 was immediately paid to Barman on retirement brought in Aman and Raman in ratio 3:2. <p>Prepare Revaluation Account and Partner's Capital Account at the time of retirement of partner.</p>																				
26.	<p>Space Ventures Limited was registered with an authorised capital of ₹ 20,00,000 divided into 2,00,000 shares of ₹ 10 each. The company offered 80,000 shares for public subscription payable ₹ 4 on application and ₹ 7 on allotment (including ₹ 1 premium). Public had applied for 1,10,000 shares and pro-rata allotment was made in the ratio of 5:4. Remaining applications were rejected. Mukta, holding 6,000 shares failed to pay allotment money. Her shares were being forfeited and later re-issued 4,000 shares at a discount of ₹ 2 per share.</p> <p>Pass necessary entries in the books of Space Ventures Ltd.</p> <p style="text-align: center;">OR</p> <p>Chitinoor Ltd. invited applications for 2,00,000 shares of ₹ 10 each payable ₹ 3 on application, ₹ 5 on allotment (including ₹ 1 premium) and balance on call. Applications were received for 3,00,000 shares out of which 20% applications were rejected and remaining were allotted on pro-rata basis. Rohan, an applicant of 12,000 shares failed to pay allotment money and Mohan holding 8,000 shares paid the entire money along with allotment. Subsequently the call was made, all the money was duly received except from Rohan. Later on, company issued a notice to Rohan to pay the balance in 15 days failing which his shares would be forfeited.</p> <p>Rohan cleared his dues within the stipulated time period.</p> <p>Journalise.</p>	6																			
	<p>Part B :- Analysis of Financial Statements (Option – I)</p>																				
27.	<p>A company had following balances in their books of Accounts</p> <table border="1"> <thead> <tr> <th></th><th>31 March, 2025</th><th>31 March, 2024</th></tr> </thead> <tbody> <tr> <td>Raw Material</td><td>40,000</td><td>30,000</td></tr> <tr> <td>Work in Progress</td><td>1,00,000</td><td>1,40,000</td></tr> <tr> <td>Finished Goods</td><td>70,000</td><td>1,00,000</td></tr> <tr> <td>Stock in Trade</td><td>2,00,000</td><td>1,20,000</td></tr> </tbody> </table> <p>Determine the amount of Change in Inventories to be shown in Statement of Profit and Loss Account.</p> <table border="1"> <tr> <td>A. ₹ 20,000</td><td>B. ₹ (20,000)</td><td>C. ₹ (10,000)</td><td>D. ₹ 10,000</td></tr> </table>		31 March, 2025	31 March, 2024	Raw Material	40,000	30,000	Work in Progress	1,00,000	1,40,000	Finished Goods	70,000	1,00,000	Stock in Trade	2,00,000	1,20,000	A. ₹ 20,000	B. ₹ (20,000)	C. ₹ (10,000)	D. ₹ 10,000	1
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28.	<p>Inventory Turnover Ratio of company was 5 times. The firm had Revenue from operations of ₹ 5,00,000 and Gross Profit was 25% of Cost of Revenue from Operations. Determine the amount of Opening Inventory if Closing Inventory was ₹ 60,000.</p> <table border="1"> <tr> <td>A. ₹ 80,000</td><td>B. ₹ 60,000</td><td>C. ₹ 1,00,000</td><td>D. ₹ 50,000</td></tr> </table> <p style="text-align: center;">OR</p> <p>Assertion (A) :- Gross Profit Ratio is always higher than Net Profit Ratio.</p>	A. ₹ 80,000	B. ₹ 60,000	C. ₹ 1,00,000	D. ₹ 50,000	1															
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	<p>Reason (R) :- To calculate Net Profit, Indirect Expenses are subtracted from Gross Profit and Indirect Incomes are added to Gross Profit.</p> <table border="1"> <tr> <td>A. Both A and R are correct, and R is the correct explanation of A</td></tr> <tr> <td>B. Both A and R are correct, but R is not the correct explanation of A</td></tr> <tr> <td>C. A is correct but R is incorrect</td></tr> <tr> <td>D. A is incorrect but R is correct</td></tr> </table>	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 correct but R is incorrect	D. A is incorrect but R is correct																																					
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<p>29.</p>	<p>Proposed Dividend for the year ended March 31, 2025 and March 31, 2024 were ₹ 2,50,000 and ₹ 2,00,000 respectively. Shareholders finalised the dividend amount at ₹ 1,80,000 during the year ended March 31, 2025 in AGM held in June-July 2024. Unclaimed dividend as at March 31, 2025 was ₹ 10,000.</p> <p>Choose the correct option while preparing Cash Flow Statement for the year ended March 31, 2025:</p> <table border="1"> <tr> <td>A. Proposed Dividend added in Net Profit after tax will be ₹ 2,00,000 and outflow of Dividend paid in financing activities will be ₹ 1,90,000.</td></tr> <tr> <td>B. Proposed Dividend added in Net Profit after tax will be ₹ 2,50,000 and outflow of Dividend paid in financing activities will be ₹ 2,00,000.</td></tr> <tr> <td>C. Proposed Dividend added in Net Profit after tax will be ₹ 1,80,000 and outflow of Dividend paid in financing activities will be ₹ 1,90,000.</td></tr> <tr> <td>D. Proposed Dividend added in Net Profit after tax will be ₹ 1,80,000 and outflow of Dividend paid in financing activities will be ₹ 1,70,000.</td></tr> </table>	A. Proposed Dividend added in Net Profit after tax will be ₹ 2,00,000 and outflow of Dividend paid in financing activities will be ₹ 1,90,000.	B. Proposed Dividend added in Net Profit after tax will be ₹ 2,50,000 and outflow of Dividend paid in financing activities will be ₹ 2,00,000.	C. Proposed Dividend added in Net Profit after tax will be ₹ 1,80,000 and outflow of Dividend paid in financing activities will be ₹ 1,90,000.	D. Proposed Dividend added in Net Profit after tax will be ₹ 1,80,000 and outflow of Dividend paid in financing activities will be ₹ 1,70,000.	<p>1</p>																																				
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	<p>OR</p> <p>Provision for Tax for the year ended March 31, 2025 and 31 March 2024 were ₹ 3,00,000 and ₹ 2,80,000 respectively. During the year Tax paid was ₹ 2,50,000. Determine the amount of Tax proposed during the year by the firm.</p> <table border="1"> <tr> <td>A. ₹ 3,00,000</td> <td>B. ₹ 2,30,000</td> <td>C. ₹ 2,80,000</td> <td>D. ₹ 2,70,000</td> </tr> </table>	A. ₹ 3,00,000	B. ₹ 2,30,000	C. ₹ 2,80,000	D. ₹ 2,70,000																																					
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<p>30.</p>	<p>Which of the following is cash flow from Operating activities for a finance company:</p> <table border="1"> <tr> <td>A. Conversion of debentures into shares</td> <td>B. Dividend received</td> </tr> <tr> <td>C. Building purchased</td> <td>D. Dividend paid</td> </tr> </table>	A. Conversion of debentures into shares	B. Dividend received	C. Building purchased	D. Dividend paid	<p>1</p>																																				
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<p>31.</p>	<p>Complete the following Comparative Balance Sheet as at March 31, 2024 and March 31, 2025</p> <table border="1"> <thead> <tr> <th>PARTICULARS</th> <th>31st March 2024</th> <th>31st March, 2025</th> <th>Absolute Change</th> <th>Percentage Change</th> </tr> </thead> <tbody> <tr> <td>Shareholders' Funds</td> <td>6,00,000</td> <td>??</td> <td>3,00,000</td> <td>??</td> </tr> <tr> <td>Non-current Liabilities</td> <td>3,00,000</td> <td>??</td> <td>NIL</td> <td>??</td> </tr> <tr> <td>Current Liabilities</td> <td>??</td> <td>3,00,000</td> <td>2,00,000</td> <td>??</td> </tr> <tr> <td>TOTAL</td> <td>??</td> <td>??</td> <td>??</td> <td>??</td> </tr> <tr> <td>Non-current Assets</td> <td>7,00,000</td> <td>??</td> <td>??</td> <td>50</td> </tr> <tr> <td>Current Assets</td> <td>??</td> <td>??</td> <td>??</td> <td>??</td> </tr> <tr> <td>TOTAL</td> <td>??</td> <td>??</td> <td>??</td> <td>??</td> </tr> </tbody> </table>	PARTICULARS	31st March 2024	31st March, 2025	Absolute Change	Percentage Change	Shareholders' Funds	6,00,000	??	3,00,000	??	Non-current Liabilities	3,00,000	??	NIL	??	Current Liabilities	??	3,00,000	2,00,000	??	TOTAL	??	??	??	??	Non-current Assets	7,00,000	??	??	50	Current Assets	??	??	??	??	TOTAL	??	??	??	??	<p>3</p>
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	<p>OR</p> <p>Prepare Common Size Statement of Profit and Loss for the year ended March 31, 2025</p> <table border="1"> <thead> <tr> <th>PARTICULARS</th> <th>31st March, 2025</th> </tr> </thead> <tbody> <tr> <td>Revenue from Operations</td> <td>40,00,000</td> </tr> <tr> <td>Other Expenses</td> <td>4,00,000</td> </tr> <tr> <td>Other Income</td> <td>6,00,000</td> </tr> <tr> <td>Employee Benefit Expenses</td> <td>8,00,000</td> </tr> <tr> <td>Purchases of Stock in Trade</td> <td>10,00,000</td> </tr> <tr> <td>Change in Inventory</td> <td>(2,00,000)</td> </tr> </tbody> </table>	PARTICULARS	31st March, 2025	Revenue from Operations	40,00,000	Other Expenses	4,00,000	Other Income	6,00,000	Employee Benefit Expenses	8,00,000	Purchases of Stock in Trade	10,00,000	Change in Inventory	(2,00,000)																											
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	Tax Rate 50 %																									
32.	<p>(i) Give two examples of Inventory except Raw Materials, Work in Progress, Finished Goods and Stock in Trade.</p> <p>(ii) Where will you disclose the amount of loss on issue of debentures written off out of Statement of Profit and Loss?</p> <p>(iii) Where will you disclose Purchase of Raw Materials in Financial Statement of Company?</p>	3																								
33.	<p>Quick Ratio of Roxy Traders is 0.8 : 1. State with reasons whether the following transactions will increase , decrease or will have no change on the ratio</p> <p>a) Goods purchased on Credit</p> <p>b) Outstanding Expenses paid</p> <p>c) Sale of Fixed Assets a 20% loss</p> <p>d) Issue of Debentures at Premium to Vendors</p> <p style="text-align: center;">OR</p> <p>From the following information, calculate Trade Receivables Turnover Ratio:</p> <p>Cost of Revenue from Operations (Cost of Goods Sold) : Rs. 6,00,000 Gross Profit on Cost : 25%</p> <p>Cash Sales: 20% of Total Sales Opening Debtors: Rs. 1,00,000 Closing Debtors : Rs. 2,00,000.</p> <p>Provision for Doubtful Debts: Opening Rs. 10,000 and Closing Rs.20,000.</p>	4																								
34.	<p>Extracts of the Balance Sheets of M/s Agrawal Ltd. as on 31st March,2024 and 31st March 2025 along with additional information are given below. You are required to calculate:</p> <p>(i) Operating profit before changes in working capital.</p> <p>(ii) Cash Flows from Financing Activities.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">31.03.2025</th> <th style="text-align: center;">31.03.2024</th> </tr> </thead> <tbody> <tr> <td>Equity Share Capital</td> <td style="text-align: center;">12,00,000</td> <td style="text-align: center;">9,00,000</td> </tr> <tr> <td>10% Preference Share Capital</td> <td style="text-align: center;">4,00,000</td> <td style="text-align: center;">5,00,000</td> </tr> <tr> <td>Cash Credit</td> <td style="text-align: center;">2,50,000</td> <td style="text-align: center;">1,00,000</td> </tr> <tr> <td>Profit and Loss (Cr.)</td> <td style="text-align: center;">8,00,000</td> <td style="text-align: center;">6,00,000</td> </tr> <tr> <td>12% Debentures</td> <td style="text-align: center;">4,00,000</td> <td style="text-align: center;">3,00,000</td> </tr> <tr> <td>Bank overdraft</td> <td style="text-align: center;">1,00,000</td> <td style="text-align: center;">75,000</td> </tr> <tr> <td>Outstanding Interest on Debentures</td> <td style="text-align: center;">3,000</td> <td style="text-align: center;">-----</td> </tr> </tbody> </table> <p>Additional Information:</p> <p>a) New equity shares and debentures were issued on last day the current accounting year ended 31st March, 2025. Debentures were issued at a discount of 5% which was written off at the end of the year.</p> <p>b) Dividend on preference shares and interim dividend @ 15% were paid on equity shares on 31st March, 2025</p> <p>c) Preference Shares were redeemed on 1st April, 2025 at a premium of 5%. The premium was provided out of profits.</p>		31.03.2025	31.03.2024	Equity Share Capital	12,00,000	9,00,000	10% Preference Share Capital	4,00,000	5,00,000	Cash Credit	2,50,000	1,00,000	Profit and Loss (Cr.)	8,00,000	6,00,000	12% Debentures	4,00,000	3,00,000	Bank overdraft	1,00,000	75,000	Outstanding Interest on Debentures	3,000	-----	6
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Part B :- Computerised Accounting
(Option – II)

27.	A 'legend' can be repositioned on the chart: (A) On the right side only (B) On the left side only (C) On the bottom of x-axis (D) Anywhere	1
-----	--	---

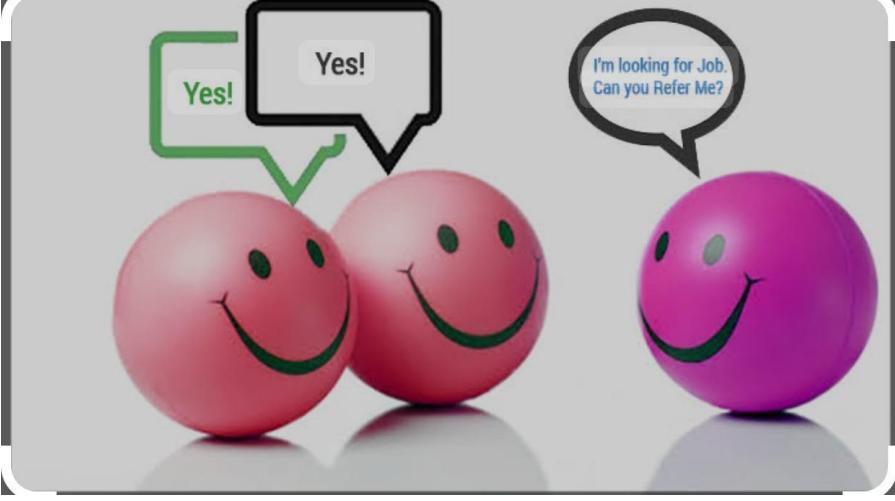
	OR	
	<p>The need for codification is for:</p> <ul style="list-style-type: none"> (A) the generation of mnemonic codes (B) securing the accounting reports (C) easy processing of data and keeping records (D) the encryption of data 	
28.	To see all available shape styles of a chart, which of the following buttons is clicked?	1
	<ul style="list-style-type: none"> (A) More (B) Chart tool (C) Picture (D) Custom 	
29.	Which of the following is not an advantage of computerised accounting system?	1
	<ul style="list-style-type: none"> (A) Timely generation of reports in desired format (B) Ensures effective control over the system (C) Faster obsolescence of technology (D) Confidentiality of data is maintained 	
30.	<p>A sequential code refers to code applied to some documents where:</p> <ul style="list-style-type: none"> (A) Account heads are assigned to documents (B) Numbers and letters are assigned in consecutive order (C) Special names are given to accounts (D) Documents are arranged in special sequence 	1
	OR	
	<p>Name the Accounting information sub-system which is linked with other sub-systems for obtaining information about cost and expenses:</p> <ul style="list-style-type: none"> (A) Cash and Bank sub-system (B) Costing sub-system (C) Expense accounting sub-system (D) Final accounts sub-system 	
31.	What is encryption and how is it helpful in CAS?	3
32.	State any three limitations of Computerised Accounting System.	3
33.	<p>State steps to be taken in preparation of a chart.</p> <p style="text-align: center;">OR</p> <p>What are the uses of 'Error Alert tab'?</p>	4
34.	What is meant by 'Merging a range of cells'? How is it done? State the steps to split a merged cell.	6

	<p style="text-align: center;">BUSINESS STUDIES (054)</p> <p style="text-align: center;">SAMPLE QUESTION PAPER</p> <p style="text-align: center;">CLASS XII (2025-26)</p> <p style="text-align: center;">MM – 80</p>	
	<p style="text-align: center;">TIME: 3 Hours</p> <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 questions together. 	
Q.N		Marks
1 .	<p>The project managers in an organisation set targets for the upcoming months and outline strategies to achieve them. At the same time, they assign specific roles and responsibilities to their team members. They motivate them to meet the deadline, by celebrating their achievements and taking their feedback. Thus, various functions are simultaneously performed by all managers all the time. Name the characteristic of Management discussed above.</p> <p>a) Management is a dynamic function</p> <p>b) Management is a continuous process</p> <p>c) Management is an intangible force</p> <p>d) Management is goal oriented</p>	1

2.	<p>Henri Fayol's principle of discipline which emphasizes obedience to organisational rules and employment agreement, is evolved out of the experience and collective wisdom of managers. The nature of principle of management reflected through the above statement is-----</p> <p>a) Universal applicability b) Flexible c) Mainly behavioral d) Formed by practice and experimentation</p>	1
3.	<p>Read the following statements: Assertion (A) and Reason (R). Choose the correct alternative from those given below:</p> <p>ASSERTION(A): Maslow's need hierarchy theory of motivation is widely recognised and appreciated yet criticised.</p> <p>REASON(R): Even though Maslow's theory focuses on needs as a basis of motivation and helps to develop understanding about the motivation phenomenon, his propositions are questioned on their classification and hierarchy.</p> <p>Alternatives :</p> <p>(a) Both Assertion (A) and Reason (R) are true. (b) Both Assertion (A) and Reason (R) are false. (c) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion. (d) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion.</p>	1

4.	<p>Read the following statements carefully:</p> <p>Statement- I Values are basic truths or guidelines for behaviour which are formed after research in work situations.</p> <p>Statement- II While practising Principles of Management, values cannot be neglected as business organisations have to fulfil social and ethical responsibility towards society.</p> <p>In the light of given statements , choose the correct alternative from the following:</p> <p>(a) Both the statements are true.</p> <p>(b) Both the statements are false.</p> <p>(c) Statement I is true, Statement II is false.</p> <p>(d) Statement II is true, Statement I is false</p>	1
5.	<p>Manu Priya is working as the Human Resource Manager of EDT Limited at an annual salary of ₹ 8 lakh per annum and is also offered shares of the company at a set price which is lower than the market price. The method being used to calculate the compensation provided to her is—-----.</p> <p>a) Time based direct financial payment</p> <p>b) Indirect financial payment</p> <p>c) Time based Pay Plus incentives</p> <p>d) Performance based direct financial payment</p>	1

6.	<p>Out of the following, which is/are the component(s) of the social environment.</p> <p>1) Rate of inflation has increased by 2% leading to a higher total cost for business enterprises.</p> <p>2) Various specialty health food and grocery shops have opened in an area where fitness and health enthusiasts live.</p> <p>3) Life expectancy rate in India has improved over the past 20 years due to adequate health facilities and infrastructure.</p> <p>4) A company in its human resource manual discloses a zero tolerance policy for racial discrimination and discriminatory practices against employees with disability.</p> <p>5) The Advertising Standards Council of India prohibits the advertisement that promotes products or services that are banned by law.</p> <p>Choose the correct option :</p> <p>a) only 2</p> <p>b) 1,2,3</p> <p>c) 2,4,5</p> <p>d) 2,3,4</p>	1
7.	<p>Name the element of marketing mix which includes deciding about the features, quality, packaging, labelling and branding of goods or services or 'anything of value' which is offered to the market for sale.</p> <p>a) promotion</p> <p>b) place</p> <p>c) product</p> <p>d) price</p>	1

8 .	<p>Choose the correct statement about the controlling function of management.</p> <p>a) No corrective action is required when the deviation goes beyond the acceptable range in important areas.</p> <p>b) Deviations should be analysed for their causes.</p> <p>c) Measurement of actual performance should be done only after the task is complete.</p> <p>d) Managers must keep a check on each and every activity, otherwise the entire organisation may suffer.</p>	1
9.	<p>Look at the picture given below and answer the question that follows:</p>  <p>Identify the incorrect statement about the type of source of recruitment depicted above.</p> <p>a) Management can attract qualified people to apply for vacant positions in the organisation.</p> <p>b) It may lead to dissatisfaction and frustration among existing employees.</p> <p>c) Such employees are not likely to be good employees as their background is not sufficiently known.</p> <p>d) Management has a wider choice while selecting people for employment.</p>	1

10.	<p>Arrange the following elements of communication process in the correct sequence:</p> <p>i) Media ii) Message iii) Sender iv) Decoding v) Receiver vi) Feedback vii) Encoding</p> <p>Choose the correct option:</p> <p>a) iii, i, vii, ii, v, iv, vi b) iii, ii, vii, i, iv, v, vi c) ii, iii, vii, vi, iv, v, i d) ii, i, vii, iii, v, iv, vi</p>	
11.	<p>Choose the correct statement about the meaning of depository.</p> <p>a) Depository holds and transfers securities in the Demat Form. b) Depository serves as an intermediary and buys and sells securities on the instructions of clients. c) Depository is like a bank and keeps securities in electronic form on behalf of investors. d) Depository buys securities from a company and sells to the public at a higher price.</p>	1
12.	<p>A product will be purchased only if it is perceived to be giving the greatest benefit for the money.</p> <p>Name the feature of marketing reflected in this statement</p> <p>a) Creating a market offering b) Customer value c) Exchange mechanism d) Needs and wants</p>	1

13.	<p>Match the concepts of management given in column I with their meaning given in column II</p> <table border="1"> <thead> <tr> <th></th><th>COLUMN I</th><th></th><th>COLUMN II</th></tr> </thead> <tbody> <tr> <td>A</td><td>Management Hierarchy</td><td>i</td><td>Involves defining and grouping of activities, resource allocation and establishment of authority relationships.</td></tr> <tr> <td>B</td><td>Coordination</td><td>ii</td><td>Involves establishing performance standards measuring actual performance and taking corrective action</td></tr> <tr> <td>C</td><td>Organising</td><td>iii</td><td>It shows orderly arrangement of individual and group efforts to ensure unity of action in realisation of common objectives.</td></tr> <tr> <td>D</td><td>Controlling</td><td>iv</td><td>Refers to different levels in the organisation created as a result of authority responsibility relationships binding individuals as superiors and subordinates.</td></tr> </tbody> </table>		COLUMN I		COLUMN II	A	Management Hierarchy	i	Involves defining and grouping of activities, resource allocation and establishment of authority relationships.	B	Coordination	ii	Involves establishing performance standards measuring actual performance and taking corrective action	C	Organising	iii	It shows orderly arrangement of individual and group efforts to ensure unity of action in realisation of common objectives.	D	Controlling	iv	Refers to different levels in the organisation created as a result of authority responsibility relationships binding individuals as superiors and subordinates.	1
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14.	<p>Choose the correct option from the following:</p> <p>a) Aiv, B iii, Cii, Di b) ii, B iii, Cii, Dii c) Aiv, B iii, Ci, Dii d) Aiii, Biv, Ci, Dii</p>	1																				
14.	<p>Mr Gun Amroha, the General Manager of Welworth Textiles scans the business environment and adapts the organisation to the changes taking place in different dimensions of the business environment. However, it is still difficult for him to accurately assess the future trends. Identify the limitation of planning related to the above.</p> <p>a) Planning leads to rigidity. b) Planning may not work in a dynamic environment.</p>	1																				

	<p>c) Planning does not guarantee success.</p> <p>d) Planning reduces creativity.</p>	
15.	<p>Name the step in the staffing process which enables the organizations to offer opportunities for career advancement to their employees by facilitating learning, thereby helping the organisations to not only attract but also retain its talented people in the organisation.</p> <p>a. Placement and Orientation</p> <p>b. Recruitment</p> <p>c. Training and Development</p> <p>d. Performance Appraisal</p>	1
16.	<p>‘Game of Clones’, a reputed amusement company has decided to run an advertising campaign for which it is hiring various celebrities. The campaign involves an expenditure of ₹ 150 Crores. Identify the financial decision involved in the above case.</p> <p>a. Long term investment decision</p> <p>b. Financing decision</p> <p>c. Working capital decision</p> <p>d. Dividend decision</p>	1
17.	<p>Arth Nivesh Limited has a high fixed operating cost. The Finance Manager informs the Chief Finance Officer that, in case the company decides to take a loan, for its future financial needs, its fixed financial cost will also increase leading to an overall increase in cost. Identify the factor affecting choice of capital structure discussed above.</p> <p>a) Cost of debt</p>	1

	<p>b) Floatation cost</p> <p>c) Risk consideration</p> <p>d) Control</p>	
18.	<p>The Finance Manager of Elle Pharma Limited, Mr Ashish Manjrekar wants to raise funds through debt or equity to the extent of ₹2 crores. For this purpose, he approaches a well regulated financial market that facilitates the mobilisation of long term capital for companies. Identify the market where Mr Ashish Manjrekar can raise the funds.</p> <p>a) Money market</p> <p>b) Secondary market</p> <p>c) Capital market</p> <p>d) Wholesale debt market</p>	1
19.	<p>‘Companies are required to ensure that the dividend does not violate the terms of loan agreement.’ Identify the relevant factor affecting dividend decisions being discussed above.</p> <p>a) Access to capital market</p> <p>b) Legal constraints</p> <p>c) Stock market reaction</p> <p>d) Contractual constraints</p>	1

20.	<p>Read the following statements carefully:</p> <p>Statement I- The objective of financial management is to maximize the wealth of directors of the company</p> <p>Statement II- The financing decision of the company is unaffected by the extent of retained earnings.</p> <p>In the light of given statements , choose the correct alternative from the following:</p> <p>(a) Both the statements are true.</p> <p>(b) Both the statements are false.</p> <p>(c) Statement I is true, Statement II is false.</p> <p>(d) Statement II is true, Statement I is false.</p>	1
21.	<p>A) State any three points of significance of decentralization.</p> <p>OR</p> <p>B) State any three limitations of formal organisation.</p>	3
22.	<p>Anabel Creations, an apparel designing company has a huge pile of young men's and women's garments to be sold across its branches in various cities. In order to clear the stock, the company has decided to give a heavy discount on its garments, with a view to lure the buyers. It is also visiting various colleges for sponsoring fashion shows in order to push its sales. However, the garments are not liked by the customers as they have not been made as per their needs and preferences.</p> <p>a) Identify and state the Marketing Management philosophy being followed by Anabel Creations.</p> <p>b) Name and state any two other philosophies of Marketing apart from the one identified in part a.</p>	3
23.	<p>A) Give any three points of distinction between the money market and capital market.</p> <p>OR</p> <p>B) Give any three protective functions performed by Securities and Exchange Board of India.</p>	3

24.	<p>Muralidhar Parekh started textile printing business in Gujarat in the year 2022 by using practices like eco-friendly dyeing and printing processes in order to ensure environmental sustainability. Soon the business started flourishing. For the financial year 2024-25, Muralidhar formulated the organisational goal of increasing sales by 10% and framed strategies for their achievement. Since his job was complex and stressful, he appointed subordinates to carry out the main task of implementing and controlling the plans and strategies made by him.</p> <p>Identify the level at which the necessary workforce was appointed for implementing and controlling the plans and strategies made by Muralidhar Parekh. What will they need to do to carry out this main task? State any two points.</p>	3
25.	<p>A) Explain the following functions of Marketing:</p> <ul style="list-style-type: none"> a. Customer support services b. Packaging and labelling <p>OR</p> <p>B) Explain two features of the following:</p> <ul style="list-style-type: none"> a. Personal selling b. Advertising 	4
26.	<p>A) Explain why planning is considered as</p> <ul style="list-style-type: none"> a) pervasive b) futuristic function of management. <p>OR</p> <p>B) Explain the following as a type of plans :</p> <ul style="list-style-type: none"> a) strategy b) procedure 	4

27.	<p>The Marketing Research Manager of 'Trendy Textiles' has been assigned the task of analysing the influence of Generation Z on fashion trends. On studying the forces that affect business, he observed that increased awareness amongst Generation Z, with respect to, environmental protection, preference of individuality over trends, rejection of traditional norms in clothing, greater use of social media have increased the demand for sustainable and innovative styles in clothing, 'Do It Yourself' (DIY) products, promotion of products on various social media platforms by companies.</p> <p>a) In context of the above case, identify and explain the feature of the business environment highlighted above.</p> <p>b) Explain any two features of the business environment, apart from the one identified in part a).</p>	4
28.	'A good control system helps the organisation in various ways'. State any four points to support the statement.	4
29.	<p>The Factory Manager of Manik Steel Plant, Mussadi Lal was in dilemma over workers shirking work. It was becoming difficult for him to identify the workers who sometimes faked illness to skip work and on various other times, intentionally wasted time, which led to underutilisation of resources. The job of the workers was complex and intricate. He discussed the problem with one of his retired friends, Kantilal, who suggested him to appoint eight supervisors who would be specialists in their own fields and would be assigned work according to his/her qualities. Identify and explain the technique of scientific management discussed above.</p>	4
30.	<p>PP Motors is a reputed automobile company known for manufacturing high performance four wheelers. The company plans to hire eight new engineers. Akhilesh Banerjee, the Human Resource Manager has eliminated unfit job seekers based on the information supplied in the</p>	4

	<p>application forms, conducted various tests and interviews and verified the information of the applicants.</p> <p>Identify and explain the remaining steps that Mr Banerjee must undertake in order to ensure that the organisation gets the best among the available, from the pool of prospective job candidates.</p>	
31.	<p>Satya Prakash has been successfully running a dry fruit wholesale business in Rajasthan for the past five years. He makes sufficient investments in current assets in order to facilitate smooth day-to-day operations of the business. The company has recently sold dry fruits worth ₹ 50 lakhs to one of its corporate customers, 'Deshmukh Pure Grains' on a strict credit policy. Satya Prakash then immediately placed an additional order for replenishment of stock. However, he received the dry fruits from his supplier after a large time lag.</p> <p>a) State the concept of Financial Management discussed above.</p> <p>b) Briefly explain the factors highlighted above that will affect the requirement of the concept identified in part a).</p>	6
32.	<p>Mr Pankaj Kumar is working as the Human Resource Manager in Alankaar Fabrics Limited heading a team of fifteen people in his department. He has played a key role in the success of his organisation by maintaining good interpersonal relations with his subordinates and influencing their behaviour. The subordinates willingly cooperate with him and his working style to increase the output of the organisation.</p> <p>a) Identify and explain the element involved in one of the functions of management discussed in the above case.</p> <p>b) State any four features of the element identified in part a).</p>	6

33.	<p>Malini and Shalini recently completed their web designing course from a reputed University in Mumbai. Malini opened her own website development company 'Rapid Software Private Limited'. In order to ensure a smooth flow of communication and better control over the operations of her business, she divided the entire work of a company into four departments i.e web designing, accounting, research and development and customer service. All departments are required to report to a coordinating head. The company became successful in the market as all operations were carried out with a high degree of specialisation.</p> <p>Shalini joined a big group named Babylon.com, Inc. which offered a variety of services like Babylon Web Services, Babylon Prime, Babylon Retail. She was appointed as the head of Babylon Web Services division and was made responsible for the profit or loss of her service division. She was happy to take the responsibility as the division would function as an autonomous unit, thus enabling her to make faster decisions.</p> <p>(a). Identify the types of the framework within which managerial and operating tasks are performed, in the organisations, of which, Malini and Shalini were a part of.</p> <p>(b). Give any four differences between the frameworks identified above.</p>	6
34.	<p>A) State any six reliefs available to a consumer under Consumer Protection Act, 2019.</p> <p>OR</p> <p>B) State the rights available under Consumer Protection Act, 2019 for the protection and promotion of interest of consumers.</p>	6

SAMPLE QUESTION PAPER (2025-26)

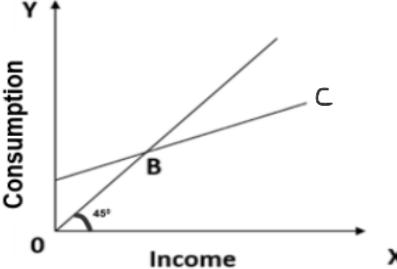
ECONOMICS (030) CLASS 12

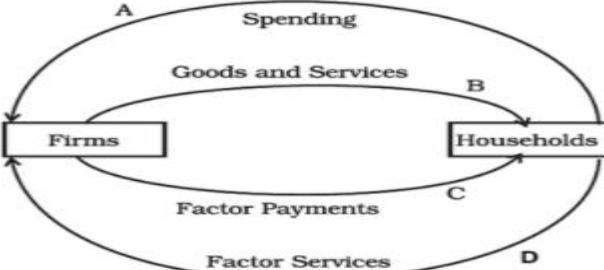
TIME: 3 HOURS

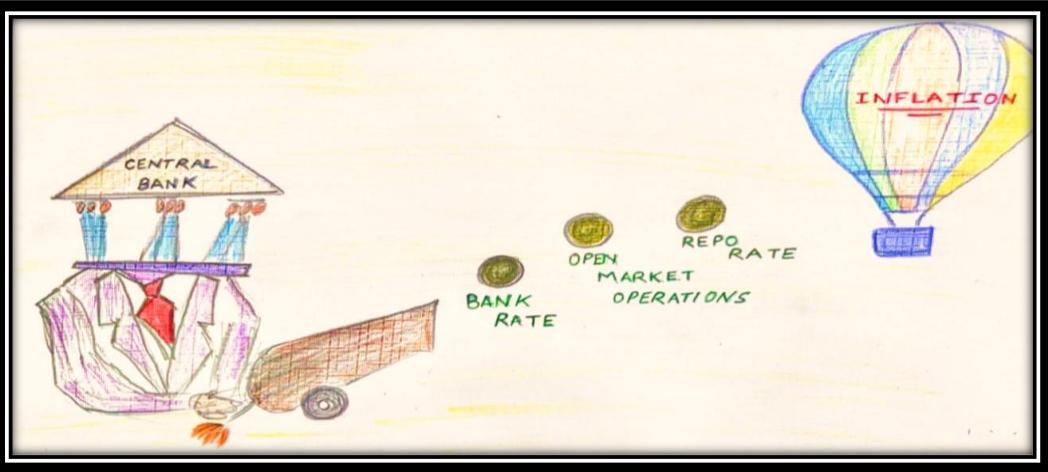
M.M. – 80

GENERAL INSTRUCTIONS:

- I. This question paper contains two sections:
Section A – Macro Economics
Section B – Indian Economic Development
- II. This paper contains 20 Multiple Choice Type Questions of 1 mark each.
- III. This paper contains 4 Short Answer Type Questions of 3 marks each to be answered in 60 to 80 words.
- IV. This paper contains 6 Short Answer Type Questions of 4 marks each to be answered in 80 to 100 words.
- V. This paper contains 4 Long Answer Type Questions of 6 marks each to be answered in 100 to 150 words.

S.NO.	SECTION A – MACRO ECONOMICS	MARKS
1	<p>With reference to the given diagram, which of the following is true at point B? (Choose the correct option)</p>  <p>A. Slope of Consumption Curve = 0 B. Average Propensity to Consume = 0 C. Slope of Saving Curve = 1 D. Average Propensity to Consume = 1</p> <p>Note: The following question is for the Visually Impaired Candidates only, in lieu of Q.1</p> <p>Identify, which of the following is true at the Break-Even level of Income. (Choose the correct option)</p> <p>A. Slope of Consumption Curve = 0 B. Average Propensity to Consume = 0 C. Slope of Saving Curve = 1 D. Average Propensity to Consume = 1</p>	1
2	<p>“Real Gross Domestic Product (GDP) is estimated to attain a level of ₹ 173.82 lakh crore in the year 2023-24. The corresponding Nominal GDP is estimated to stand at ₹ 295.36 lakh crore in the same year.”</p> <p>Source: https://pib.gov.in/PressReleaseDetailm.aspx?PRID=2022323&reg=3&lang=1</p> <p>On the basis of the given data, the value of GDP deflator would be _____. (Choose the correct option to fill up the blank)</p> <p>A. 295.36 B. 58.85 C. 169.92 D. 173.82</p>	1
3	<p>“Money is non-perishable and is acceptable to anyone at any point of time.”</p> <p>Identify, the function of money indicated in the aforesaid statement and choose the correct option.</p> <p>A. Store of Value B. Medium of Exchange C. Unit of Account D. Standard of Deferred Payments</p>	1
4	<p>Read the following statements carefully:</p> <p>Statement 1: Devaluation of currency is said to occur when the exchange rate is decreased under the Fixed Exchange Rate System.</p>	1

	<p>Statement 2: Under the Floating Exchange Rate System, competent authorities do not maintain foreign exchange reserves.</p> <p>In light of the given statements, choose the correct option from the following:</p> <ol style="list-style-type: none"> Statement 1 is true and Statement 2 is false. Statement 1 is false and Statement 2 is true. Both Statements 1 and 2 are true. Both Statements 1 and 2 are false. 													
5	<p>Refer to the given diagram carefully:</p>  <p>The arrows C and D represent _____ Market. (Choose the correct option to fill up the blank)</p> <ol style="list-style-type: none"> Factor Goods Stock Financial <p>Note: The following question is for the Visually Impaired Candidates only, in lieu of Q.5</p> <p>In a simplified economy, the flow of Factor Services from Households to Firms and Factor Payments from Firms to Households represents _____ Market. (Choose the correct option to fill up the blank)</p> <ol style="list-style-type: none"> Factor Goods Stock Financial 	1												
6	<p>Deflationary Gap refers to the gap by which _____ falls short of the Aggregate Demand required to establish full employment equilibrium. (Choose the correct option to fill up the blank)</p> <ol style="list-style-type: none"> ex-ante Aggregate Demand ex-post Aggregate Demand ex-ante Aggregate Supply ex-post Aggregate Supply 	1												
7	<p>Read the following statements carefully:</p> <p>Statement 1: Final Goods do not undergo any further transformation at the hands of any producer.</p> <p>Statement 2: Final goods may get transformed during their consumption by the ultimate purchaser.</p> <p>In light of the given statements, choose the correct option from the following:</p> <ol style="list-style-type: none"> Statement 1 is true and Statement 2 is false. Statement 1 is false and Statement 2 is true. Both Statements 1 and 2 are true. Both Statements 1 and 2 are false. 	1												
8	<p>On the basis of the given information, Money Supply (M1) would be ₹ _____ crore. (Choose the correct option)</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Components</th> <th>Amount (in ₹ crore)</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>Currency held by the Public</td> <td>320</td> </tr> <tr> <td>(ii)</td> <td>Net Demand Deposits with Commercial Banks</td> <td>260</td> </tr> <tr> <td>(iii)</td> <td>Net Time Deposits with Commercial Banks</td> <td>200</td> </tr> </tbody> </table> <p>Options:</p> <ol style="list-style-type: none"> 580 780 675 875 	S.No.	Components	Amount (in ₹ crore)	(i)	Currency held by the Public	320	(ii)	Net Demand Deposits with Commercial Banks	260	(iii)	Net Time Deposits with Commercial Banks	200	1
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	<p>Mishika, an economics student, read the above information and identified both the transactions cited, as autonomous transactions in the BoP account of XYZ country.</p> <p>Do you agree with Mishka's identification of the underlying concept? Give valid arguments in support of your answer.</p>																															
15	<p>Refer to the given image carefully:</p> 	4																														
	<p>Explain any two indicated measures taken by the Central Bank to control the highlighted macroeconomic issue.</p> <p>Note: The following question is for the Visually Impaired Candidates only, in lieu of Q.15</p> <p>State and explain any two measures that can be taken by the Central Bank to control the situation of inflation.</p>	4																														
16 (A)	<p>(I) Suppose in an economy, the Marginal Propensity to Consume (MPC) is 0.8. The government introduced an investment project of ₹ 1,000 crore which led to a manyfold increase in National Income (Y) and Consumption Expenditure (C). Estimate:</p> <p>(a) Value of Investment Multiplier (k) (b) Missing Values of (i) and (ii)</p> <table border="1"> <thead> <tr> <th>Rounds</th> <th>Change in Investment (ΔI)</th> <th>Change in Income (ΔY)</th> <th>Change in Consumption (ΔC)</th> <th>Change in Savings (ΔS)</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>1,000</td> <td>1,000</td> <td>800</td> <td>200</td> </tr> <tr> <td>II</td> <td></td> <td>800</td> <td>640</td> <td>160</td> </tr> <tr> <td>...</td> <td></td> <td>...</td> <td>...</td> <td>...</td> </tr> <tr> <td>...</td> <td></td> <td>...</td> <td>...</td> <td>...</td> </tr> <tr> <td></td> <td></td> <td>(i)</td> <td>(ii)</td> <td>1,000</td> </tr> </tbody> </table> <p>(II) "Sum of the Average Propensity to Consume (APC) and Average Propensity to Save (APS) is always equal to one."</p> <p>Justify the given statement with the help of a suitable argument.</p> <p style="text-align: center;">OR</p>	Rounds	Change in Investment (ΔI)	Change in Income (ΔY)	Change in Consumption (ΔC)	Change in Savings (ΔS)	I	1,000	1,000	800	200	II		800	640	160			(i)	(ii)	1,000	3
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16 (B)	<p>(I) Suppose in a hypothetical economy, people save 20% of their additional income. Ex-Ante Investments equals ₹ 100 and the equilibrium level of income stands at ₹ 700. Calculate dissavings at zero level of income.</p> <p>(II) Define Effective Demand. Explain the adjustment mechanism to attain the level of Effective Demand, if ex-ante Aggregate Demand is more than ex-ante Aggregate Supply.</p>	2																														
17	<p>Refer to the given text carefully:</p> <p>Revenue receipts of the Union Government of India, consisting of tax revenue and non-tax revenue increased year-on-year by 14.5% in the financial year 2023-24, with robust growth in both tax and non-tax revenues.</p>	4																														

<p>In spite of the global trend of widening fiscal deficit and increasing debt burden, India has remained on the course of fiscal consolidation. In the post-covid period, significant fiscal consolidation could be achieved largely due to buoyant government revenues. The favourable fiscal performance in the financial year 2022-23, emerged as the cornerstone of India's macroeconomic stability.</p> <p>The fiscal deficit of the Union Government has been brought down from 6.4% of Gross Domestic Product (GDP) in the financial year 2022-23 to 5.6% of GDP in the financial year 2023-24, according to the data released by the Office of Controller General of Accounts (CGA).</p> <p>Strong growth in direct and indirect taxes on account of resilient economic activities and increased compliance meant that the tax revenues generated exceeded the budgetary estimates.</p> <p>Additionally, higher-than-budgeted non-tax revenue in the form of dividends from the Reserve Bank of India (RBI) has buffeted revenue receipts. In combination with restrained revenue expenditure, these buoyant revenues ensured lower deficits.</p> <p>A decomposition of the fiscal deficit over the past few years reveals that with a narrowing revenue deficit, a larger share of the fiscal deficit is being accounted for by capital outlay. This suggests that the productivity of borrowed resources has improved.</p> <p>Source: Economic Survey 2023-24</p> <p>On the basis of the given text and common understanding, answer the following questions:</p> <p class="list-item-l1">(I) Differentiate between the two types of revenue receipts as indicated in the above text. 3</p> <p class="list-item-l1">(II) Elaborate the reasons behind reduction in fiscal deficit of India for the financial year 2023-24. 3</p>
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SECTION B – INDIAN ECONOMIC DEVELOPMENT

21	<p>Read the following statements: Assertion (A) and Reason (R). Choose the correct option from those given below:</p> <p>Assertion (A): Indian rural credit system was significantly transformed with the implementation of technological reforms in agriculture sector.</p> <p>Reason (R): Green Revolution led to the diversification of the portfolio of rural credit towards production-oriented lending.</p> <p>Options:</p> <ol style="list-style-type: none"> Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A). Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A). Assertion (A) is true, but Reason (R) is false. Assertion (A) is false, but Reason (R) is true. 	1																				
22	<p>Owing to the efforts of the _____, the Indian government initiated modernisation of informal sector enterprises.</p> <p>(Choose the correct option to fill up the blank)</p> <p>A. World Trade Organisation B. International Labour Organisation C. Central Statistical Office D. International Monetary Fund</p>	1																				
23	<p>Read the following text carefully:</p> <p>All economic activities can be categorized into eight different industrial divisions as:</p> <div style="text-align: center; border: 1px solid blue; padding: 10px; margin: 10px auto; width: fit-content;"> <p>CLASSIFICATION OF ECONOMIC ACTIVITIES INTO EIGHT INDUSTRIAL DIVISIONS</p> </div> <p>For simplicity, all the working persons engaged in these divisions can be clubbed into three major sectors primary, secondary and tertiary sector.</p> <p>In the light of the given text, primary sector includes _____.</p> <p>(Choose the correct option to fill up the blank)</p> <p>Options:</p> <ol style="list-style-type: none"> Only (i) (i) and (ii) (iii), (iv) and (v) (vi), (vii) and (viii) 	1																				
24	<p>The population explosion and advent of Industrial Revolution led to the _____. (Choose the correct option to fill up the blank)</p> <p>A. reversal of supply-demand relationship of environmental resources B. decrease in demand for environmental resources C. decrease in the average temperature of the earth's lower atmosphere D. increase in the environmental quality</p>	1																				
25	<p>From the set of terms given in Column I and corresponding facts given in Column II, choose the correct pair of statements:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 25%; text-align: center;">Column I</th> <th style="width: 25%;"></th> <th style="width: 25%; text-align: center;">Column II</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td style="text-align: center;">Animal Husbandry</td> <td style="text-align: center;">i</td> <td style="text-align: center;">Instability in income</td> </tr> <tr> <td>(b)</td> <td style="text-align: center;">Fisheries</td> <td style="text-align: center;">ii</td> <td style="text-align: center;">Mixed crop-livestock farming system</td> </tr> <tr> <td>(c)</td> <td style="text-align: center;">Horticulture</td> <td style="text-align: center;">iii</td> <td style="text-align: center;">India is the second-largest producer of fruits and vegetables in the world</td> </tr> <tr> <td>(d)</td> <td style="text-align: center;">Agro-processing industry</td> <td style="text-align: center;">iv</td> <td style="text-align: center;">Iron and steel industry</td> </tr> </tbody> </table> <p>Options:</p> <ol style="list-style-type: none"> (a)-i (b)-ii (c)-iii (d)-iv 		Column I		Column II	(a)	Animal Husbandry	i	Instability in income	(b)	Fisheries	ii	Mixed crop-livestock farming system	(c)	Horticulture	iii	India is the second-largest producer of fruits and vegetables in the world	(d)	Agro-processing industry	iv	Iron and steel industry	1
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(d)	Agro-processing industry	iv	Iron and steel industry																			

26	<p>_____ is the measure being taken to create orderly and transparent marketing conditions. (Choose the correct option to fill up the blank)</p> <p>Options:</p> <ol style="list-style-type: none"> Cooperative marketing Assurance of Minimum Support Price (MSP) Provision of infrastructural development Regulation of markets 	1												
27	<p>Read the following statements carefully:</p> <p>Statement 1: Great Leap Forward (GLF) campaign met with many problems like severe drought, conflict with Russia etc.</p> <p>Statement 2: Under agricultural reforms, commune lands were allocated to individual households for ownership, who were allowed to keep all post-tax income.</p> <p>In light of the given statements, choose the correct option from the following:</p> <ol style="list-style-type: none"> Statement 1 is true and Statement 2 is false. Statement 1 is false and Statement 2 is true. Both Statements 1 and 2 are true. Both Statements 1 and 2 are false. 	1												
28	<p>“Pakistan was maintaining a healthy economic growth momentum of 6.3% till 1990s, however it lost its track of economic growth falling to 5.3% between 2015-17.”</p> <p>Do you agree with the given statement? Justify your answer with valid arguments.</p>	3												
29 (A)	<p>“Edward Barbier defined Sustainable Development as a strategy which is directly concerned with increasing the material standard of living of the poor at the grass root level.”</p> <p>Elaborate the given statement.</p>	3												
29 (B)	<p>OR</p> <p>Distinguish between self-employed and hired workers with the help of a suitable example.</p>	3												
30 (A)	<p>“The introduction of Railways affected the structure of the Indian economy in two important ways.”</p> <p>Justify the given statement, with valid explanation.</p>	4												
30 (B)	<p>OR</p> <p>Refer to the given information carefully:</p>													
	<p>_____</p> <table border="1"> <thead> <tr> <th></th> <th>1921-30</th> <th>1941-50</th> <th>Increase in expectation of life during 20 years</th> </tr> </thead> <tbody> <tr> <td>Expectation of life at birth</td> <td>26 years and 11 months</td> <td>32 years and 5 months</td> <td>5 years and 6 months</td> </tr> <tr> <td>Expectation of life at age 10</td> <td>36 years and 5 months</td> <td>39 years</td> <td>2 years and 7 months</td> </tr> </tbody> </table> <p>Source: Census of India 1951</p> <p>Answer the following questions on the basis of the given information and common understanding:</p> <ol style="list-style-type: none"> Identify and define the demographic indicator given in the above table. List any two such demographic indicators. State the stage of demographic transition India entered in 1921. 		1921-30	1941-50	Increase in expectation of life during 20 years	Expectation of life at birth	26 years and 11 months	32 years and 5 months	5 years and 6 months	Expectation of life at age 10	36 years and 5 months	39 years	2 years and 7 months	
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Expectation of life at age 10	36 years and 5 months	39 years	2 years and 7 months											
<p>(I) “India has been a part of many regional and global economic groupings such as G20, SAARC, BRICS etc.”</p> <p>In the light of the given statement, briefly explain the importance of regional and global economic groupings.</p> <p>(II) Define ‘Special Economic Zone’.</p>	2 1 1 3 1													
31														

32	<p>Refer to the given image carefully:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Panel A</p>  </div> <div style="text-align: center;">  <p>Panel B</p> </div> </div> <p>Answer the following questions on the basis of the given image:</p> <p>(I) Identify the type of farming in Panel A and Panel B.</p> <p>(II) Explain any one advantage and disadvantage of the type of farming in Panel B over Panel A.</p> <p>Note: The following question is for the Visually Impaired Candidates only, in lieu of Q.32</p> <p>Explain any one advantage and disadvantage of a whole system of farming that restores, maintains and enhances the ecological balance over conventional farming.</p>	<p>1</p> <p>3</p> <p>4</p> <p>3</p> <p>3</p> <p>4</p> <p>2</p>
33 (A)	<p>(I) "Government made a fresh statement of policy on the 30th April, 1956 which will help speeding up industrialisation and, in particular, to develop heavy industries and machine making industries, to expand the public sector, and to build up a large and growing co-operative sector".</p> <p>Source: http://164.100.161.239/plans/planrel/fiveyr/index2.html (Planning Commission)</p> <p>In the light of the given text and common understanding, comment upon the classification of industries under the revised policy.</p> <p>(II) "The implementation of land ceiling legislation in India encountered several challenges that hindered its effectiveness."</p> <p>Do you agree with the given statement? Give valid reasons in support of your answer.</p> <p style="text-align: center;">OR</p>	<p>3</p> <p>3</p>
33 (B)	<p>(I) "The process of globalisation through liberalisation and privatisation has produced positive, as well as, negative results for India."</p> <p>Do you agree with the given statement? Give valid explanation in support of your answer.</p> <p>(II) "The Government of India was compelled to introduce the economic reforms of 1991."</p> <p>State any two reasons behind the introduction of Economic Reforms of 1991.</p>	<p>4</p> <p>2</p>
34	<p>Read the following text carefully:</p> <p>The National Education Policy (NEP) 2020, asserts that education is fundamental for achieving full human potential, providing universal access to quality education and leadership on the global stage in terms of economic growth, social justice and equality. Thus, it presents the best way forward for developing and optimising India's resources.</p> <p>To attain the goals of education, NEP 2020 unequivocally endorses a substantial increase in public investment in education by both the Central government and all State governments. This is considered extremely critical for achieving the high-quality and equitable public education system that is truly needed for India's future progress and growth. To achieve this, they need to</p>	

increase the public investment in Education sector to reach 6% of GDP at the earliest.

One of the primary goals of the schooling system must be to ensure that children are enrolled in and are attending school. As per the 75th round household survey by NSSO in 2017-18, the number of out of school children in the age group of 6 to 17 years is 3.22 crore. With a goal to achieve 100% Gross Enrolment Ratio in preschool to secondary level by 2030, it will be a top priority to bring these children back into the educational fold as early as possible, and to prevent further students from dropping out. For the same, two initiatives that will be undertaken are to provide:

- effective and sufficient infrastructure, so that all students have access to safe and engaging school education at all levels from pre-primary school to Grade 12.
- regular trained teachers at each stage, special care shall be taken to ensure that no school remains deficient on infrastructure support.

Source: https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English.pdf
(adapted and modified)

On the basis of the given text and common understanding, answer the following questions:

(I) “Education is considered fundamental for achieving full human potential”. Justify the given statement with valid arguments.	2
(II) Discuss the importance of increasing public expenditure in education.	2
(III) State any two main initiatives that may be implemented to tackle school dropouts and avert additional students from leaving school.	2

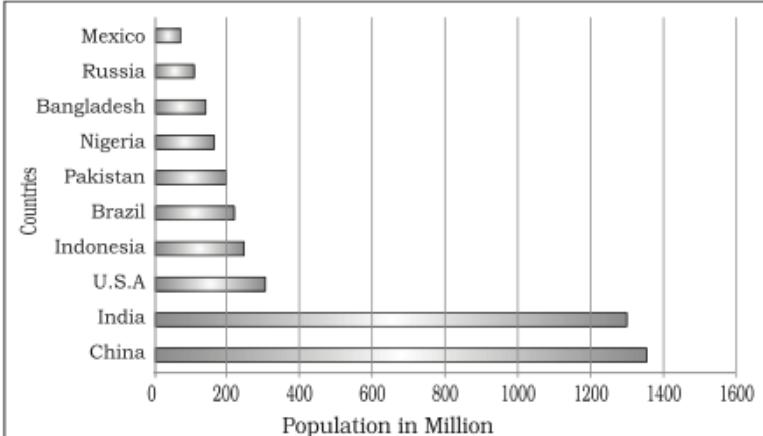
GEOGRAPHY CODE- 029
SAMPLE QUESTION PAPER*
CLASS : XII (2025- 26)

Time allowed: 3 Hours

Maximum marks: 70

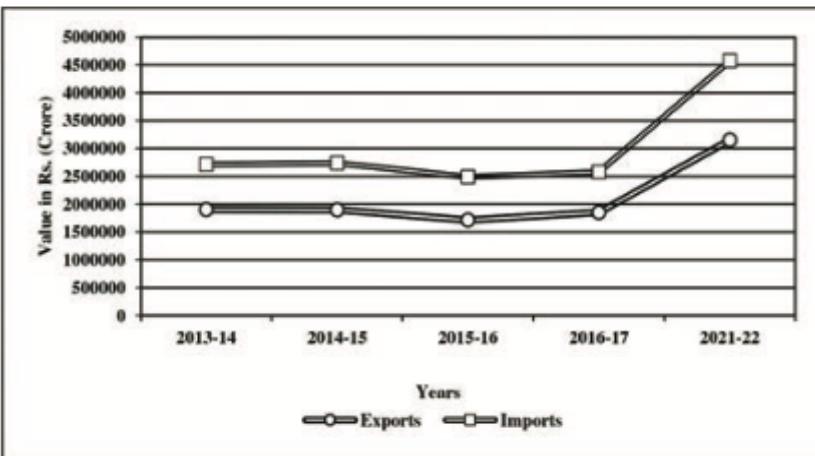
General Instructions:

1. This question paper contains **30** questions. **All** questions are **compulsory**.
2. This question paper is divided into **five** sections. **Sections-A, B, C, D and E**.
3. **Section A** - Question number **1 to 17** are Multiple Choice type questions carrying 1 mark each.
4. **Section B** - Question number **18 and 19** are Source based questions carrying 3 marks each.
5. **Section C** - Question number **20 to 23** are Short Answer type questions carrying 3 marks each. Answer to these questions shall be written in 80 to 100 words.
6. **Section D** Question number **24 to 28** are Long Answer type questions carrying 5 marks each. Answer to these questions shall be written in 120 to 150 words.
7. **Section E** Question number **29 and 30** are Map based questions carrying 5 marks each.

S. No.		Marks																						
Section-A																								
1.	<p>Refer to the bar graph displaying the population of various countries. What is the approximate combined population of the three least populous countries shown in the graph?</p>  <table border="1"> <caption>Approximate population data from the bar graph</caption> <thead> <tr> <th>Country</th> <th>Population (in Millions)</th> </tr> </thead> <tbody> <tr><td>Mexico</td><td>~50</td></tr> <tr><td>Russia</td><td>~100</td></tr> <tr><td>Bangladesh</td><td>~150</td></tr> <tr><td>Nigeria</td><td>~200</td></tr> <tr><td>Pakistan</td><td>~250</td></tr> <tr><td>Brazil</td><td>~300</td></tr> <tr><td>Indonesia</td><td>~350</td></tr> <tr><td>U.S.A</td><td>~400</td></tr> <tr><td>India</td><td>~1250</td></tr> <tr><td>China</td><td>~1350</td></tr> </tbody> </table> <p>(https://ncert.nic.in/textbook.php?legy1=2-8)</p> <p>A. 500 million B. 400 million C. 300 million D. 200 million</p>	Country	Population (in Millions)	Mexico	~50	Russia	~100	Bangladesh	~150	Nigeria	~200	Pakistan	~250	Brazil	~300	Indonesia	~350	U.S.A	~400	India	~1250	China	~1350	1
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2.	<p>Study the graph given below and answer the following.</p> <p>A country is currently experiencing low birth rates, low death rates, and a highly urbanized society with advanced healthcare and industrial infrastructure. Based on the Demographic Transition Theory, this country is most likely in which stage?</p> <p>A. Stage I: High Fluctuating B. Stage II: Expanding C. Stage III: Low Fluctuating D. Pre-Transition Phase</p>	1
3.	<p>Country Y has an HDI of 0.950 and is ranked among the highest in human development. Which of the following policies should it focus on to maintain this status?</p> <p>A. Increasing industrial output to boost GNI per capita B. Not investing in infrastructure for healthcare and education C. Reducing emphasis on education to focus on economic activities D. Strengthening policies on environmental sustainability and social equity.</p>	1
4.	<p>Assertion (A): Population change in an area is an important indicator of economic development, social upliftment, and historical and cultural background of the region.</p> <p>Reason (R): The population growth or population change refers to the change in the number of inhabitants of a territory during a specific period of time, which can be expressed in terms of absolute numbers or percentage.</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>	1

5.	<p>Which of the following activities is an example of a quaternary activity?</p> <ol style="list-style-type: none"> Transporting coal from mines to factories via railways A lawyer drafting contracts for corporate clients A salesperson working at a local supermarket A scientist developing genetically modified crops in a research lab 	1										
6.	<p>Match the following policies with the pillar of human development they reflect:</p> <table border="1"> <thead> <tr> <th>Policies/Initiatives</th><th>Pillar of Human Development</th></tr> </thead> <tbody> <tr> <td>1. Equal access to education for girls and boys</td><td>A. Sustainability</td></tr> <tr> <td>2. Availability of resources for future generations</td><td>B. Equity</td></tr> <tr> <td>3. Encouraging participation in local governance</td><td>C. Productivity</td></tr> <tr> <td>4. Skill development programs for higher efficiency</td><td>D. Empowerment</td></tr> </tbody> </table> <p>A. 1-A, 2-B, 3-C, 4-D B. 1-B, 2-A, 3-D, 4-C C. 1-C, 2-D, 3-B, 4-A D. 1-D, 2-C, 3-A, 4-B</p>	Policies/Initiatives	Pillar of Human Development	1. Equal access to education for girls and boys	A. Sustainability	2. Availability of resources for future generations	B. Equity	3. Encouraging participation in local governance	C. Productivity	4. Skill development programs for higher efficiency	D. Empowerment	1
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4. Skill development programs for higher efficiency	D. Empowerment											
7.	<p>What is the primary purpose of Regional Trade Blocs?</p> <ol style="list-style-type: none"> To reduce global trade by limiting international exchanges between member nations. To encourage trade between countries with geographical proximity and similar or complementary trading items while reducing trade restrictions in the developing world. To replace global organizations and regulate all international trade activities globally. To enforce trade tariffs between member nations and prevent free trade agreements. 	1										
8.	The given graph shows the trend of exports and imports (in Rs. Crores) over the years 2013-14 to 2021-22.	1.										



Source: Economic Survey 2022-23

Based on the graph, which of the following statements is correct?

- A. Imports consistently increased from 2013-14 to 2021-22.
- B. Exports and imports were nearly equal in 2016-17.
- C. There was no significant change in exports between 2013-14 and 2016-17.
- D. Exports showed a sharper increase compared to imports 2016-17 and 2021-22.

9.

Table 1.1 : Decadal Growth Rates in India, 1901-2011

Census Years	Total Population	Growth Rate*	
		Absolute Number	% of Growth
1901	238396327	-----	-----
1911	252093390	(+) 13697063	(+) 5.75
1921	251321213	(-) 772117	(-) 0.31
1931	278977238	(+) 27656025	(+) 11.60
1941	318660580	(+) 39683342	(+) 14.22
1951	361088090	(+) 42420485	(+) 13.31
1961	439234771	(+) 77682873	(+) 21.51
1971	548159652	(+) 108924881	(+) 24.80
1981	683329097	(+) 135169445	(+) 24.66
1991	846302688	(+) 162973591	(+) 23.85
2001	1028610328	(+) 182307640	(+) 21.54
2011**	1210193422	(+) 181583094	(+) 17.64

1

The percentage decadal growth rate of India's population declined significantly between 1991-2001 and 2001-2011. If a policymaker wants to maintain a steady growth rate, which of the following strategies would be most effective?

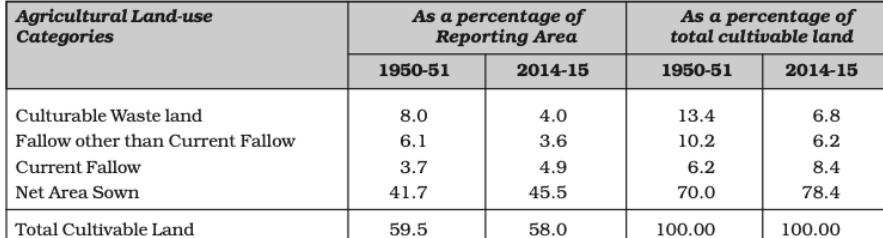
- A. Encourage higher birth rates to boost population growth.
- B. Focus on reducing investment in healthcare.
- C. Implement policies to encourage rural-to-urban migration.
- D. Promote balanced population growth through family planning and education initiatives.

10.

If a region has a high proportion of people aged below 15 years and above 65 years, what challenge is most likely to arise?

1

- A. High literacy rate
- B. Low dependency ratio

	C. Economic strain on the working-age population D. High participation in the labour force																																			
11.	Which of the following was not a measure adopted by the Government of India in the 1990s to promote liberalization and a free-market economy to influence the development of Indian agriculture? A. The creation of the Farmer's Portal to assist with insurance, agricultural storage, crops, seeds, pesticides, market prices, and welfare schemes. B. Launch of the National Mission for Sustainable Agriculture to enhance productivity, sustainability, and resilience while conserving natural resources. C. Promotion of organic farming through schemes like Paramparagat Krishi Vikas Yojana (PKVY) and Rashtriya Krishi Vikas Yojana (RKVY). D. Introduction of high-yielding seed varieties of wheat (Mexico) and rice (the Philippines) in the 1960s and 1970s.	1																																		
12.	Which of the following statements about agricultural land use in India between 1950-51 and 2014-15 is correct based on the table? A. The percentage of culturable waste land as part of the reporting area decreased from 8.0% to 4.0%. B. The net area sown as a percentage of total cultivable land decreased from 78.4% to 70.0%. C. The percentage of current fallow land as part of the reporting area decreased from 4.9% to 3.7%. D. The total cultivable land as a percentage of the reporting area increased from 58.0% to 59.5.  <table border="1"> <thead> <tr> <th rowspan="2">Agricultural Land-use Categories</th> <th colspan="2">As a percentage of Reporting Area</th> <th colspan="2">As a percentage of total cultivable land</th> </tr> <tr> <th>1950-51</th> <th>2014-15</th> <th>1950-51</th> <th>2014-15</th> </tr> </thead> <tbody> <tr> <td>Culturable Waste land</td> <td>8.0</td> <td>4.0</td> <td>13.4</td> <td>6.8</td> </tr> <tr> <td>Fallow other than Current Fallow</td> <td>6.1</td> <td>3.6</td> <td>10.2</td> <td>6.2</td> </tr> <tr> <td>Current Fallow</td> <td>3.7</td> <td>4.9</td> <td>6.2</td> <td>8.4</td> </tr> <tr> <td>Net Area Sown</td> <td>41.7</td> <td>45.5</td> <td>70.0</td> <td>78.4</td> </tr> <tr> <td>Total Cultivable Land</td> <td>59.5</td> <td>58.0</td> <td>100.00</td> <td>100.00</td> </tr> </tbody> </table>	Agricultural Land-use Categories	As a percentage of Reporting Area		As a percentage of total cultivable land		1950-51	2014-15	1950-51	2014-15	Culturable Waste land	8.0	4.0	13.4	6.8	Fallow other than Current Fallow	6.1	3.6	10.2	6.2	Current Fallow	3.7	4.9	6.2	8.4	Net Area Sown	41.7	45.5	70.0	78.4	Total Cultivable Land	59.5	58.0	100.00	100.00	1
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13.	Which of the following statements correctly describe the objectives of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)? 1. To promote the exclusive use of traditional irrigation methods in rain-fed areas. 2. To ensure access to protective irrigation for all agricultural farms and expand cultivable areas under assured irrigation. 3. To integrate water resources, distribution, and efficient usage through technologies like "Per Drop More Crop." 4. To introduce sustainable water conservation practices and improve on-farm water use efficiency. A. 1 and 3 only B. 2, 3, and 4 only C. 1, 2, and 4 only D. All of the above	1																																		

14.	<p>As a policymaker, tasked with fostering behavioural changes in the community to shift from a prevailing attitude of consumption to one focused on conservation and smart water management, which of the following programs would you prioritize for implementation?</p> <ol style="list-style-type: none"> ArvaryPani Sansad Atal Bhujal Yojana (Atal Jal) National Water Policy, 2012 Jal Kranti Abhiyan 	1										
15	<p>Assertion (A): Bio-energy is a sustainable and versatile source of energy that can be converted into electrical energy, heat energy, or gas for cooking.</p> <p>Reason (R): Bio-energy not only processes waste and garbage to produce energy but also reduces environmental pollution, enhances self-reliance, and improves the economic life of rural areas in developing countries.</p> <p>Options:</p> <ol style="list-style-type: none"> Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A). Assertion (A) is true, but Reason (R) is false. Assertion (A) is false, but Reason (R) is true 	1										
16.	<p>Match the mode of transport with its description:</p> <table border="1"> <thead> <tr> <th>Column A (Mode of Transport)</th><th>Column B (Description)</th></tr> </thead> <tbody> <tr> <td>a. Airways</td><td>1. Suitable for heavy goods over land but limited to connected regions.</td></tr> <tr> <td>b. Roadways</td><td>2. Capable of carrying large volumes of heavy goods at a lower cost.</td></tr> <tr> <td>c. Railways</td><td>3. Flexible setup and rapid delivery for high-value, low-volume goods.</td></tr> <tr> <td>d. Waterways</td><td>4. Widely accessible and easy to use for short-distance trade and delivery.</td></tr> </tbody> </table> <ol style="list-style-type: none"> a-3, b-4, c-1, d-2 a-2, b-3, c-4, d-1 a-1, b-2, c-3, d-4 a-4, b-1, c-2, d-3 	Column A (Mode of Transport)	Column B (Description)	a. Airways	1. Suitable for heavy goods over land but limited to connected regions.	b. Roadways	2. Capable of carrying large volumes of heavy goods at a lower cost.	c. Railways	3. Flexible setup and rapid delivery for high-value, low-volume goods.	d. Waterways	4. Widely accessible and easy to use for short-distance trade and delivery.	1
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17.	UDAN (UdeDesh ka Aam Nagrik) is a first-of-its kind scheme globally, designed to jump-start the regional aviation market. Regional Connectivity Scheme (RCS) -UDAN was conceived by the Ministry of	1										

	<p>Aviation (MoCA) Govt. of India, to promote regional connectivity by making fly affordable for the common citizen.</p> <p>The central idea of UDAN is</p> <ul style="list-style-type: none"> A. To encourage airlines to operate flights on regional and remote routes through enabling policies and extending incentives. B. To ensure the development of world-class international airports in metropolitan cities. C. To provide subsidies to private airlines for expanding their global flight operations. D. To improve air cargo infrastructure to support trade and export activities in rural areas. 	
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Section-B

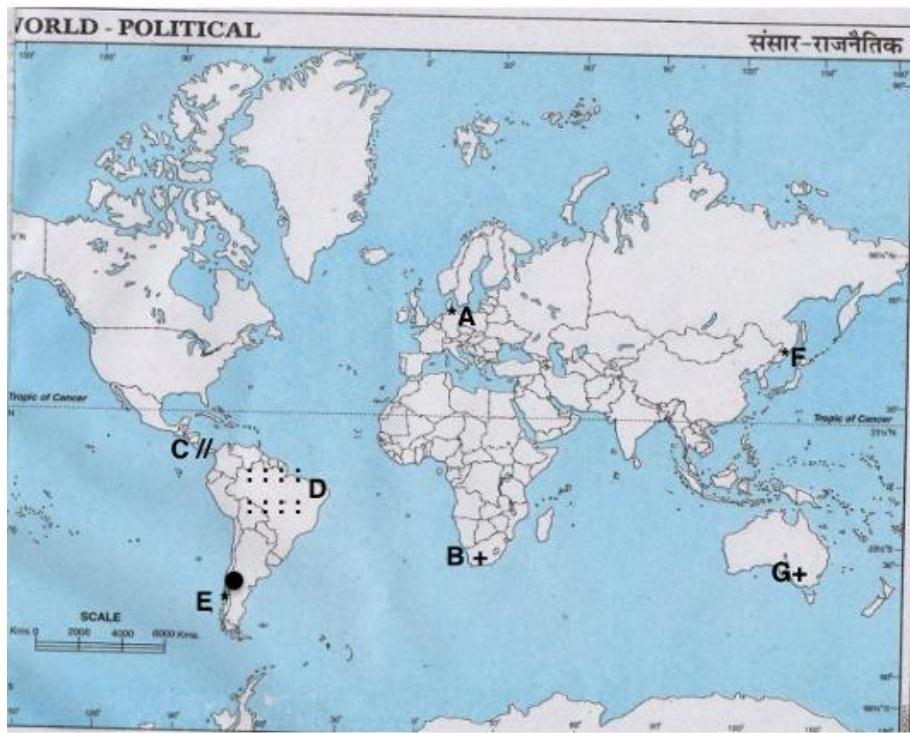
18.	<p>The concept of neo determinism was put forward by Griffith Taylor in 1920. The concept shows that neither is there a situation of absolute necessity (environmental determinism) nor is there a condition of absolute freedom (possibilism). It means that human beings can conquer nature by obeying it. They have to respond to the red signals and can proceed in their pursuits of development when nature permits the modifications. It means that possibilities can be created within the limits which do not damage the environment and there is no free run without accidents. The free run which the developed economies attempted to take has already resulted in the greenhouse effect, ozone layer depletion, global warming, receding glaciers and degrading lands. (source: https://ncert.nic.in/textbook.php?legy1=1-8)</p> <ul style="list-style-type: none"> i. Who proposed the concept of neo-determinism? ii. How did Taylor view the relationship between nature and a country's economic program? iii. Why neo determinism has become quite relevant in the present-day context? 	1+1+1 =3
19.	<p>Read the given passage carefully and answer the questions that follows:</p> <p>The concept of human development was introduced by Dr Mahbub-ul-Haq. Dr Haq has described human development as development that enlarges people's choices and improves their lives. People are central to all development under this concept. These choices are not fixed but keep on changing. The basic goal of development is to create conditions where people can live meaningful lives.</p> <p>The human development index (HDI) ranks the countries based on their performance in the key areas of health, education and access to resources. These rankings are based on a score between 0 to 1 that a country earns from its record in the key areas of human development.</p> <p>The ways to measure human development are constantly being refined and newer ways of capturing different elements of human development are being researched. Researchers have found links between the level of corruption or political freedom in a particular region.</p> <p>India ranks 132 out of 191 countries in the Human Development Index (HDI) 2021, after registering a decline in its score over two consecutive years for the first time in two decades.</p>	1+1+1 =3

	<p>(https://ncert.nic.in/textbook.php?legy1=3-8)</p> <p>The 2023 HDI stands at a new high following steep decline during 2020 and 2021 due to the COVID-19 pandemic, according to the 2023-24 Human Development Report released by the United Nations Development Programme (UNDP) on March 13, 2024.</p> <p>The report found that rich countries experienced unprecedented development. But half of the world's poorest nations continued to languish below their pre-COVID crisis levels.</p> <p>The 2023-24 Human Development Report identified Switzerland, Norway, and Iceland as leading the national human development indices, while the Central African Republic, South Sudan, and Somalia lagged the furthest behind.</p> <p>(Source:https://www.downtoearth.org.in/governance/poverty-reduction-in-reverse-far-right-populism-to-blame-says-un-2023-human-development-report-95011)</p> <ol style="list-style-type: none"> i. What does the Human Development Index (HDI) measure according to the source? ii. What significant trend did the 2023 HDI report highlight regarding the world's poorest nations? iii. Which three countries were ranked highest in the 2023 Human Development Index? 	
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Section-C		
20.	Explain how outsourcing has impacted both the countries that outsource work and the countries receiving outsourced jobs.	3
21.	How can we promote sustainable urban development while addressing challenges like pollution, resource scarcity, and congestion in growing cities and new towns? OR Discuss the objectives of Smart City Mission.	3
22.	Identify and explain three measures that urban planners can adopt to address urban transportation challenges, including congestion, pollution, and inefficiency.	3
23.	Discuss the key features of population growth in India during the period 1951–1981 including the main reasons for the rapid population increase during this phase? OR Who are adolescents? Why are they considered important in the population? What are the challenges faced by society in dealing with adolescents?	3

Section- D

24.	<p>Explain how pastoral nomadism is an adaptation to specific geographical conditions. Illustrate your answer with examples from different regions of the world.</p> <p style="text-align: center;">OR</p> <p>"Mining has played a significant role in human development, especially since the Industrial Revolution." In view of the statement, discuss the factors affecting mining activities. What are the economic and social impacts of mining on developed and developing countries, and how do these impacts differ based on their levels of industrialization and labor dynamics?</p>	3+2=5																														
25.	<p>How have countries like India, China, Brazil and Indonesia have benefitted from the development of small-scale industries?</p> <p style="text-align: center;">OR</p> <p>What are technopolies? Give two examples.</p>	3+2=5																														
26.	Explain the problems faced by slum dwellers in urban areas. How do these problems impact their quality of life?	3+2=5																														
27.	<p>Study the table showing the composition of India's exports since 2015-2021 and answer the question.</p> <p style="text-align: right;"><i>(Percentage share in Exports)</i></p> <table border="1"> <thead> <tr> <th>Commodities</th> <th>2015-16</th> <th>2016-17</th> <th>2020-21</th> <th>2021-22</th> </tr> </thead> <tbody> <tr> <td>Agriculture and allied products</td> <td>12.6</td> <td>12.3</td> <td>14.3</td> <td>11.9</td> </tr> <tr> <td>Ore and Minerals</td> <td>1.6</td> <td>1.9</td> <td>3.2</td> <td>2.0</td> </tr> <tr> <td>Manufactured goods</td> <td>72.9</td> <td>73.6</td> <td>71.2</td> <td>67.8</td> </tr> <tr> <td>Crude and petroleum products</td> <td>11.9</td> <td>11.7</td> <td>9.2</td> <td>16.4</td> </tr> <tr> <td>Other commodities</td> <td>1.1</td> <td>0.5</td> <td>2.1</td> <td>1.9</td> </tr> </tbody> </table> <p><i>Source : Economic Survey 2016-17 and 2022-23</i></p> <p>How have the composition and trends in India's exports evolved since 2015-16? Highlight five key changes.</p>	Commodities	2015-16	2016-17	2020-21	2021-22	Agriculture and allied products	12.6	12.3	14.3	11.9	Ore and Minerals	1.6	1.9	3.2	2.0	Manufactured goods	72.9	73.6	71.2	67.8	Crude and petroleum products	11.9	11.7	9.2	16.4	Other commodities	1.1	0.5	2.1	1.9	5
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28.	Formulate a development plan for the Bharmaur tribal region under the Integrated Tribal Development Project (ITDP), focusing on improving agriculture, education, and livelihood opportunities, considering the region's climatic conditions, socio-economic challenges, and potential for sustainable development.	5																														
Section-E	29.	5																														
	On the given political map of the World, seven geographical features have been marked as A, B, C, D, E, F and G. Identify any five with the help of the following information and write their correct names																															

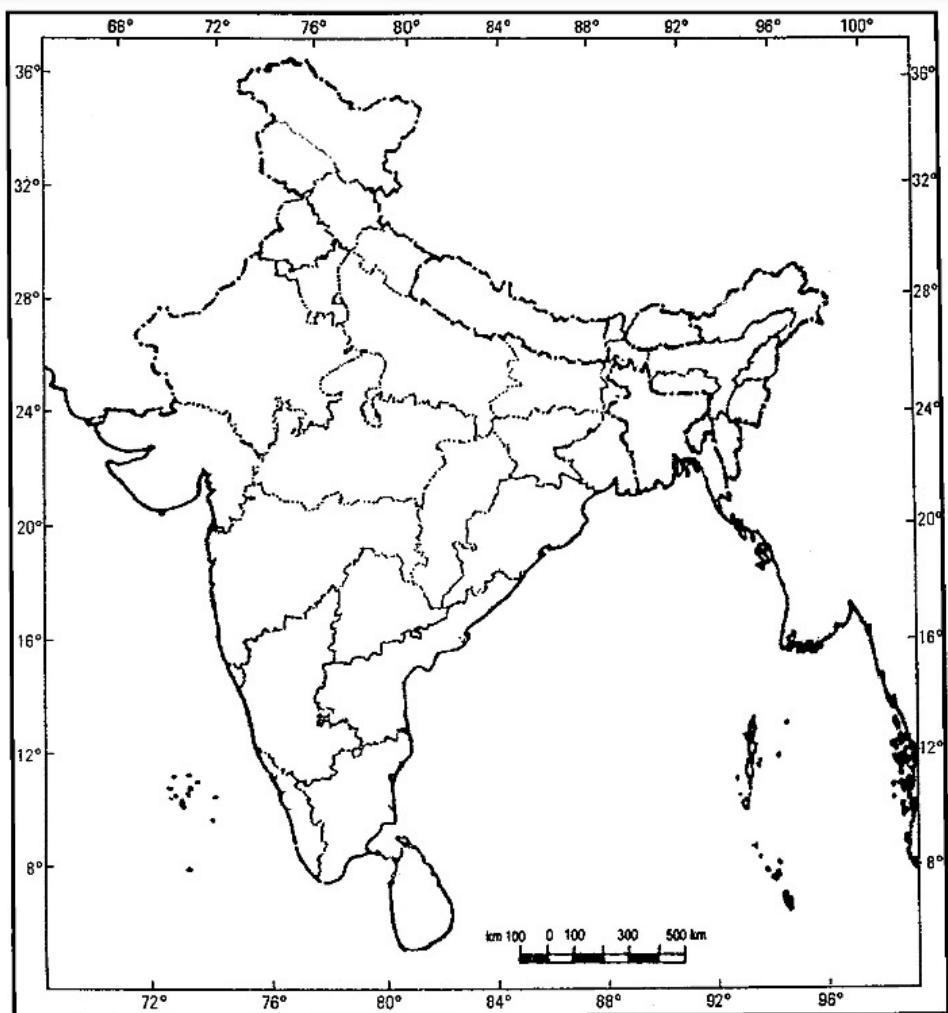


- A. Name a major seaport of Europe.
- B. Name an important seaport located in South Africa.
- C. The canal that connects Atlantic Ocean and Pacific Ocean
- D. Name an area of subsistence gathering in South America.
- E. Name one major airport of South America.
- F. Name the easternmost terminal station of Trans-Siberian Railway.
- G. Name the area of extensive commercial grain agriculture in Australia.

The following questions are for Visually Impaired Candidates only in lieu of Question No.29. Answer any five questions out of the following:

- A. A major seaport of Europe.
- B. An international seaport in South Africa.
- C. An important waterway of Europe.
- D. An area of subsistence gathering in South America.
- E. An important airport of South America.
- F. A terminal station of Trans-Siberian Railway.
- G. Region of extensive commercial grain agriculture in Australia.

30.	<p>Locate and label any five of the following geographical features on the Political Outline map of India with appropriate symbols:</p> <ul style="list-style-type: none"> A. An important iron ore mine in Odisha. B. Southernmost seaport of India C. An oil refinery in Gujarat D. The state with highest population density. E. The state leading in the production of tea F. An international airport in Karnataka. G. An important coal mine in West Bengal 	5
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The following questions are for visually impaired students in lieu of Question No.30. Attempt any five.

- A. Name an important iron ore mine in Odisha
- B. Name southernmost seaport of India
- C. Name an oil refinery in Gujarat
- D. Name the state with highest population density.
- E. Name one leading cotton producing state of India.
- F. Name the international airport of Karnataka
- G. Name an important coal mine of West Bengal