



General Instructions

- (i) **Duration:** The total duration of the examination is 2.5 hours (150 minutes).
- (ii) **Total Marks:** The complete paper carries a maximum of 500 marks.
- (iii) **Structure:** The paper has 4 Sections:
 - **Part 1:** 35 Multiple Choice Questions (Physics).
 - **Part 2:** 35 Multiple Choice Questions (Chemistry).
 - **Part 3:** 40 Multiple Choice Questions (Mathematics/Biology).
 - **Part 4:** 10 Multiple Choice Questions (Aptitude).
 - **Part 4:** 5 Multiple Choice Questions (English)
- (iv) **Compulsory Questions:** All 125 questions are compulsory.
- (v) Each question has four options. Only **one** option is correct.
- (vi) **Correct Answer:** +4 marks.
- (vii) **Incorrect Answer:** -1 (Negative marking).
- (viii) **Unanswered/Marked for Review:** 0 marks.

Physics

1. A current of 2 A flows through a resistor for 10 minutes. What is the total charge that passes through the resistor?

- (A) 600 C
 - (B) 1200 C
 - (C) 200 C
 - (D) 2400 C
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2. A ball is dropped from a height of 20 m. What is its velocity just before hitting the ground?

- (A) 14 m/s
 - (B) 19.8 m/s
 - (C) 9.8 m/s
 - (D) 39.6 m/s
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3. A body of mass 10 kg is moving with a velocity of 20 m/s. What is the kinetic energy?

- (A) 1000 J
 - (B) 2000 J
 - (C) 4000 J
 - (D) 500 J
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4. A charged particle moves in a magnetic field B with velocity components both along and perpendicular to B . What is its path?

- (A) Circular path
 - (B) Straight line
 - (C) Helical path
 - (D) Parabolic path
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5. Find x : $4(x - 2) = 3(x + 5)$.

- (A) 23
 - (B) 17
 - (C) 13
 - (D) 7
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6. Find x : $2x + 3 = 7x - 8$.

- (A) 2.2
 - (B) $11/5$
 - (C) 5
 - (D) Both (A) and (B)
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7. The sum of the first 10 terms of an A.P is 150. If the first term is 10, what is the common difference?

- (A) 1
 - (B) $10/9$
 - (C) 2
 - (D) $5/9$
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8. A stone is dropped from a height of 45 m. What is the time taken to reach the ground? ($g = 10 \text{ m/s}^2$)

- (A) 2 s
 - (B) 3 s
 - (C) 4 s
 - (D) 5 s
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9. If 'TIGER' is coded as 'JUISF', how is 'EQUAL' coded?

- (A) *PFXMB*
 - (B) *QGYNC*
 - (C) *OEWLA*
 - (D) *PGXMB*
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10. If "APPLE" is "BQQMF", how is "MANGO" written?

- (A) *NBMHP*
 - (B) *NBOHP*
 - (C) *OBNHP*
 - (D) *MBNHP*
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11. Find the odd one out: 5, 10, 20, 40, 100, 150, 200.

- (A) 40
 - (B) 100
 - (C) 150
 - (D) 200
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12. What is the oxidation state of Cobalt in $[Co(NH_3)_6]Cl_3$?

- (A) +1
 - (B) +2
 - (C) +3
 - (D) +4
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13. For $2N_2O_5 \rightarrow 4NO_2 + O_2$, if rate is 1.02×10^{-4} and $k = 3.4 \times 10^{-5} s^{-1}$, find the concentration of N_2O_5 .

- (A) 1.0 mol/L
 - (B) 2.0 mol/L
 - (C) 3.0 mol/L
 - (D) 4.0 mol/L
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