

BITSAT 2026 May 26 Shift 1

Question Paper (Memory-Based)

Conducted by BITS Pilani



General Instructions

- (i) **Duration:** The total duration of the examination is 3 hours (180 minutes).
- (ii) **Total Marks:** The complete paper carries a maximum of 390 marks.
- (iii) **Structure:** The paper has 4 Sections:
 - **Part 1:** 30 Multiple Choice Questions (Physics).
 - **Part 2:** 30 Multiple Choice Questions (Chemistry).
 - **Part 3:** 10 Multiple Choice Questions (English Proficiency),
20 Multiple Choice Questions (Logical Reasoning)
 - **Part 4:** 40 Multiple Choice Questions (Mathematics/Biology)
- (iv) **Compulsory Questions:** All 130 questions are compulsory, and +12 Questions (Optional Extra Questions)
- (v) Each question has four options. Only **one** option is correct.
- (vi) **Correct Answer:** +3 marks.
- (vii) **Incorrect Answer:** -1 (Negative marking).
- (viii) **Unanswered/Marked for Review:** 0 marks.

PHYSICS

1. A particle moves along a circle of radius R with a constant angular acceleration α . If the initial angular velocity is zero, the total acceleration of the particle at time t is:

(A) $R\alpha$

- (B) $R\alpha^2t^2$
(C) $R\alpha\sqrt{1 + \alpha^2t^4}$
(D) $R\alpha t$
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2. The focal length of a convex lens is f in air. When it is completely immersed in water of refractive index $\frac{4}{3}$, its focal length becomes (take refractive index of glass = 1.5):

- (A) f
(B) $2f$
(C) $4f$
(D) $\frac{f}{2}$
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3. The stopping potential for photoelectrons emitted from a surface illuminated by light of wavelength λ is V_s . If the intensity of the incident light is doubled while keeping wavelength identical, the stopping potential will be:

- (A) $2V_s$
(B) $\frac{V_s}{2}$
(C) V_s
(D) $4V_s$
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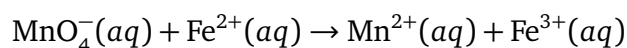
4. The de-Broglie wavelength of an electron accelerated from rest through a potential difference of 100V is approximately:

- (A) 1.227 \AA
(B) 12.27 \AA
(C) 0.1227 \AA
(D) 122.7 \AA
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CHEMISTRY

5. Balance the following redox reaction in acidic medium and determine the stoichiometric

coefficient of H₂O in the final balanced equation.



- (A) 2
 - (B) 4
 - (C) 6
 - (D) 8
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6. Titration of 0.1467 g of primary standard Na₂C₂O₄ required 28.85 mL of KMnO₄ solution. Calculate the molar concentration of KMnO₄ solution.

- (A) 0.01518 M
 - (B) 0.001518 M
 - (C) 0.15180 M
 - (D) 1.5180 M
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7. A current of 4.0 A is passed through 0.5 L of 0.2 M NaCl solution for 1200s. Calculate the pH of the solution after electrolysis.

- (A) 1.3
 - (B) 13
 - (C) 7.0
 - (D) 2.0
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8. Using the standard electrode potential, find out the pair between which redox reaction is not feasible.

E[⊖] values: Fe³⁺/Fe²⁺ = +0.77 V; I₂/I⁻ = +0.54 V; Cu²⁺/Cu = +0.34 V; Ag⁺/Ag = +0.80 V

- (A) Fe³⁺ and I⁻
 - (B) Ag⁺ and Cu
 - (C) Fe³⁺ and Cu
 - (D) Ag and Fe³⁺
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Mathematics

9. If p and q be the longest and the shortest distance respectively of the point $(-7, 2)$ from any point (α, β) on the curve whose equation is $x^2 + y^2 - 10x - 14y - 51 = 0$, then find the Geometric Mean (G.M.) of p and q .

- (A) $2\sqrt{11}$
 - (B) $5\sqrt{5}$
 - (C) 13
 - (D) 11
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10. The distance from the origin to the image of $(1, 1)$ with respect to the line $x + y + 5 = 0$ is:

- (A) $7\sqrt{2}$
 - (B) $3\sqrt{2}$
 - (C) $6\sqrt{2}$
 - (D) $4\sqrt{2}$
-

11. General solution of $\tan 5\theta = \cot 2\theta$ is:

- (A) $\theta = \frac{n\pi}{7} + \frac{\pi}{14}$
 - (B) $\theta = \frac{n\pi}{7} + \frac{\pi}{5}$
 - (C) $\theta = \frac{n\pi}{7} + \frac{\pi}{2}$
 - (D) $\theta = \frac{n\pi}{7} + \frac{\pi}{3}$
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12. The sum of the series $(x + \frac{1}{x})^2 + (x^2 + \frac{1}{x^2})^2 + (x^3 + \frac{1}{x^3})^2 \dots \dots \dots$ up to n terms is:

- (1) $\frac{x^{2n}-1}{x^2-1} \times \frac{x^{2n+2}+1}{x^{2n}} + 2n$
 - (2) $\frac{x^{2n}+1}{x^2+1} \times \frac{x^{2n+2}-1}{x^{2n}} - 2n$
 - (3) $\frac{x^{2n}-1}{x^2-1} \times \frac{x^{2n}-1}{x^{2n}} - 2n$
 - (4) None of these
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