BITSAT 2026 May 25 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.

English

1. The person with an uncontrollable urge to consume alcohol is called?

(A) Dipsomaniac

(B) Kleptomaniac

(C) Megalomaniac

(D) Pyromaniac

PHYSICS

1. A probe is dropped on the moon from a height of 20 m. Both the probe and the moon are initially at the same temperature as the surface of the moon. The specific heat capacity of the probe is 3 kJ kg^{-1} K^{-1}. If upon impact, the center of mass of the probe instantly comes to rest, calculate the final temperature of the probe. (Assume acceleration due to gravity on the moon $g_{\text{moon}} = 2$ m/s^2).

(A) $T_{\text{surface}} + 0.0133$ K

(B) $T_{\text{surface}} + 0.1333$ K

(C) $T_{\text{surface}} + 1.3333$ K

(D) $T_{\text{surface}} + 13.333$ K

2. Find the ratio of alpha particles scattered at 60° and 90° in the Rutherford alpha-particle scattering experiment.

(A) 1 : 4

(B) 4 : 1

(C) 1 : 2

(D) 2 : 1

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2. The geometric triple product magnitude $|\vec{A} \cdot (\vec{B} \times \vec{C})|$ represents which of the following mechanical quantities visually?

(A) Area of a regular hexagon

(B) Volume of a parallelopiped

(C) Surface area of a sphere

(D) Volume of a regular tetrahedron

CHEMISTRY

1. A coordination complex with an electronic configuration of $t_{2g}^3 e_g^2$ is expected to be:

(A) Strongly colored due to fully allowed transition

(B) Intensely blue due to charge transfer

(C) Colorless or extremely faintly colored

(D) Completely black due to total absorption

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2. Oxidation of D-Glucose with mild bromine water (Br_2/H_2O) gives _____, while oxidation with strong concentrated HNO_3 gives _____ respectively.

(A) Saccharic acid, Gluconic acid

(B) Gluconic acid, Saccharic acid

(C) Glucaric acid, Gluconic acid

(D) Sorbose, Fructose

MATHEMATICS

1. Given the word BITSAT, in how many ways can they be arranged such that both T are always together?

(A) 60

(B) 120

(C) 360

(D) 720

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2. Integration of $|x-1013|$ limits 0 to 2026 is equal to:

(A) 1013

(B) 1013^2

(C) 2×1013^2

(D) $\frac{1013^2}{2}$

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3. The number of ways to arrange n distinct persons around a circular table is:

(A) $n!$

(B) $(n-1)!$

(C) $\frac{n!}{2}$

(D) $\frac{(n-1)!}{2}$

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4. The volume of a parallelopiped whose coterminous edges are represented by the vectors $\vec{a}$, $\vec{b}$, and $\vec{c}$ is given by:

(A) $\vec{a} \times (\vec{b} \times \vec{c})$

(B) $\vec{a} \cdot (\vec{b} \times \vec{c})$

(C) $\vec{a} \cdot (\vec{b} \cdot \vec{c})$

(D) $\vec{a} \times (\vec{b} \cdot \vec{c})$

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5. Three coins are tossed simultaneously. The probability of getting at least one head is:

(A) $\frac{1}{8}$

(B) $\frac{3}{8}$

(C) $\frac{1}{2}$

(D) $\frac{7}{8}$

6. Solve the differential equation: $\frac{dy}{dx} = \cos(x+y) + \sin(x+y)$

(A) $\log\left|1 + \tan\left(\frac{x+y}{2}\right)\right| = x + C$

(B) $\log\left|1 + \tan\left(\frac{x+y}{2}\right)\right| = y + C$

(C) $\tan\left(\frac{x+y}{2}\right) = x + C$

(D) $\log\left|\sec\left(\frac{x+y}{2}\right)\right| = x + C$