

BITSAT 2025 June 24 Shift 1 Question Paper

Time Allowed :3 Hours	Maximum Marks :390	Total questions :130
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. Duration of Exam: 3 Hours
2. Total Number of Questions: 130 Questions
3. Section-wise Distribution of Questions:
 - Physics - 40 Questions
 - Chemistry - 40 Questions
 - Mathematics - 50 Questions
4. Type of Questions: Multiple Choice Questions (Objective)
5. Marking Scheme: Three marks are awarded for each correct response
6. Negative Marking: One mark is deducted for every incorrect answer.
7. Each question has four options; only one is correct.
8. Questions are designed to test analytical thinking and problem-solving skills.

1. A dust particle of mass 4×10^{12} mg is suspended in air under the influence of an electric field of 50 N/C directed vertically upwards. How many electrons were removed from the neutral dust particle? ($g = 10 \text{ m/s}^2$)

- (1) 15
 - (2) 8
 - (3) 5
 - (4) 4
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2. The potential of a large liquid drop when eight liquid drops are combined is 20 V. What is the potential of each single drop?

- (1) 10 V
 - (2) 7.5 V
 - (3) 5 V
 - (4) 2.5 V
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3. A simple pendulum performing small oscillations at a height R above Earth's surface has a time period of $T_1 = 4 \text{ s}$. What would be its time period at a point which is at a height $2R$ from Earth's surface?

- (1) $T_1 = T_2$
 - (2) $2T_1 = 3T_2$
 - (3) $3T_1 = 2T_2$
 - (4) $2T_1 = T_2$
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4. The area enclosed between the curve $y = \log_e(x + e)$ and the coordinate axes is:

- (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
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5. A source supplies heat to a system at the rate of 1000 W. If the system performs work at a rate of 200 W, what is the rate at which internal energy of the system increases?

- (1) 1200 W

- (2) 600 W
 - (3) 500 W
 - (4) 800 W
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6. The area enclosed between the curve $y = \log_e(x + e)$ and the coordinate axes is:

- (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
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7. In a mixture of gases, the average number of degrees of freedom per molecule is 6. If the rms speed of the molecule is c , what is the velocity of sound in the gas?

- (1) $c/\sqrt{3}$
 - (2) $c/\sqrt{2}$
 - (3) $2c/3$
 - (4) c
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8. Identify the next number in the series: 2, 6, 12, 20, ?

- (1) 30
 - (2) 32
 - (3) 34
 - (4) 36
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9. Pointing to a photograph, a man says, "I have no brothers or sisters, but the father of the person in the photograph is my father's son." Who is the person in the photograph?

- (1) His son
 - (2) His nephew
 - (3) His brother
 - (4) His father
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