

BITSAT 2025 June 24 Shift 1 Question Paper

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

1. The **BITSAT 2025** (Birla Institute of Technology and Science Admission Test) is conducted in **Computer-Based Test (CBT)** mode.
2. The duration of the test is **3 hours (180 minutes)**.
3. The question paper consists of **130 multiple-choice questions (MCQs)** divided into four sections:
 - **Physics – 30 Questions**
 - **Chemistry – 30 Questions**
 - **English Proficiency and Logical Reasoning – 20 Questions**
 - **Mathematics/Biology – 50 Questions**
4. Each correct answer carries **3 marks**, and each incorrect answer leads to a **penalty of 1 mark**.
5. After attempting all 130 questions, candidates can attempt up to **12 additional questions** (4 each from Physics, Chemistry, and Mathematics/Biology) — only if time permits.
6. The language of the question paper is **English only**.
7. Candidates must reach the test center **at least 1 hour before** the commencement of the examination.
8. Candidates must carry:
 - **BITSAT 2025 Hall Ticket**
 - **Valid Photo ID Proof** (Aadhaar, Passport, PAN, Driving Licence, etc.)
9. Rough work must be done only on the provided sheets. Additional sheets will not be supplied.
10. Use of **calculators, mobile phones, smart watches, or any other electronic devices** is strictly prohibited.
11. Follow all **invigilator's instructions** carefully. Any malpractice will result in **cancellation of candidature**.

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? ($g = 10 \text{ m/s}^2$)

- (A) 15
 - (B) 8
 - (C) 5
 - (D) 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?

- (A) 10 V
 - (B) 7.5 V
 - (C) 5 V
 - (D) 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 $T = 4 \text{ s}$. What would be its time period at a point which is at a height $2R$ from Earth's surface?

- (A) $T = T$
 - (B) $2T = 3T$
 - (C) $3T = 2T$
 - (D) $2T = T$
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4. The area enclosed between the curve $y = \log(x + e)$ and the coordinate axes is:

- (A) 1
 - (B) 2
 - (C) 3
 - (D) 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?

- (A) 1200 W
 - (B) 600 W
 - (C) 500 W
 - (D) 800 W
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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?

- (A) $c/3$

- (B) $c/2$
 - (C) $2c/3$
 - (D) c
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8. Identify the next number in the series: 2, 6, 12, 20, ?

- (A) 30
 - (B) 32
 - (C) 34
 - (D) 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?

- (A) His son
 - (B) His nephew
 - (C) His brother
 - (D) His father
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