

BITSAT 2023 Question Paper June 18

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

1. The examination is conducted in **Computer-Based Test (CBT)** mode. All questions will appear on the computer screen.
2. The total duration of the examination is **3 hours**. No extra time will be granted under any circumstances.
3. The question paper consists of **Multiple Choice Questions (MCQs)**, each having four options with only one correct answer.
4. Candidates must read each question carefully before selecting the answer. Answers can be changed only within the allotted test duration.
5. The examination follows a **negative marking scheme**. Marks will be deducted for incorrect answers, while unattempted questions will not carry any penalty.
6. Use of **calculators, mobile phones, smart watches, Bluetooth devices, or any other electronic gadgets** is strictly prohibited inside the examination hall.
7. Rough work must be done only on the rough sheets provided at the test center. These sheets must be returned after the examination.
8. Candidates must ensure that they have logged in using the correct credentials. Any discrepancy should be reported immediately to the invigilator.
9. No candidate will be allowed to leave the examination hall before the completion of the test duration.
10. Candidates must maintain discipline and follow all **instructions given by the invigilators**.
11. Any form of **unfair means, impersonation, or misconduct** will lead to immediate disqualification.
12. In case of any technical issue during the examination, candidates should remain seated and inform the invigilator without panic.

1. The electrons in the atom of an element which determine its chemical and electrical properties are called?

- (A) Core electrons
- (B) Valence electrons
- (C) Neutrons
- (D) Protons

2. A motorcyclist is trying to jump across a path as shown by driving horizontally off a cliff A at a speed of 5 m/s. Ignore air resistance and take $g = 10\text{m/s}^2$. The speed with which he touches the cliff B is?

- (A) 10 m/s
 - (B) 12 m/s
 - (C) 15 m/s
 - (D) 20 m/s
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3. Select the correct alternative for the blank space:

Grains : Store :: Wood : ?

- (A) Forest
 - (B) Furniture
 - (C) Tree
 - (D) Sawmill
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4. Frenkel defect is also known as?

- (A) Schottky Defect
 - (B) Interstitial Defect
 - (C) Dislocation Defect
 - (D) Vacancy Defect
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5. Two capacitors, of capacitance C, are connected in series. If one of them is filled with a dielectric substance K, what is the effective capacitance?

- (A) $\frac{KC}{1+K}$
 - (B) $\frac{C}{1+K}$
 - (C) $\frac{2KC}{1+K}$
 - (D) $C(1 + K)$
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6. Saturday falls four days after today, which is the 6th of January, on what day did the 1st of December of the previous year fall?

- (A) Sunday
 - (B) Monday
 - (C) Tuesday
 - (D) Wednesday
-

7. The freezing point of the 0.05 molal solution of non - electrolyte in water is? (kf = 1.86)

- (A) -1.86°C
 - (B) -0.93°C
 - (C) -0.093°C
 - (D) 0.093°C
-

8. Allyl phenyl ether can be prepared by heating?

- (A) $\text{C}_6\text{H}_5\text{Br} + \text{CH}_2 = \text{CH} - \text{CH}_2\text{ONa}$
 - (B) $\text{CH}_2 = \text{CH} - \text{CH}_2\text{Br} + \text{C}_6\text{H}_5\text{ONa}$
 - (C) $\text{C}_6\text{H}_5\text{OH} + \text{CH}_2 = \text{CH} - \text{CH}_2\text{Br}$
 - (D) $\text{C}_6\text{H}_5 - \text{CH} = \text{CH}_2 + \text{HBr}$
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9. The circumcenter of the triangle formed by the pair of lines, $xy+2(x+y)+4=0$ and straight line $x+y+2=0$ is?

- (A) $(-1, -1)$
 - (B) $(-2, -2)$
 - (C) $(0, 0)$
 - (D) $(-1, -2)$
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10. Viscosity is a property of?

- (A) Solids only
 - (B) Fluids (Liquids and Gases)
 - (C) Gases only
 - (D) Liquids only
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11. Length of tangent from (3,4) to $x^2 + y^2 = 9$?

- (A) 3
 - (B) 4
 - (C) 5
 - (D) $\sqrt{7}$
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12. Identify the odd one out: 65, 51, 78, 104

- (A) 65
- (B) 51
- (C) 78

(D) 104
