



# BITSAT 2026 April 19 (Shift-2)

## 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. Young's moduli of the material of wires A and B are in the ratio of 1:4, while its area of cross sections are in the ratio of 1:3. If the same amount of load is applied to both the wires, the amount of elongation produced in the wires A and B will be in the ratio of (Assume length

of wires A and B are same)

- (A) 1:12
  - (B) 12:1
  - (C) 36:1
  - (D) 1:36
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2. A hollow glass stopper of relative density 2.5 just sinks in water. The ratio of volume of cavity to that of stopper is

- (A) 1:2
  - (B) 3:5
  - (C) 1:5
  - (D) 3:2
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3. A gas undergoes a process in which the pressure and volume are related by  $VP^n = \text{constant}$ . The bulk modulus of the gas is

- (A)  $nP$
  - (B)  $P^{1/n}$
  - (C)  $P/n$
  - (D)  $P^n$
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4. The initial pressure and volume of an ideal gas are  $P_0$  and  $V_0$ . The final pressure of the gas when the gas is suddenly compressed to volume  $V_0/4$  will be: (Given  $\gamma = \text{ratio of specific heats at constant pressure and at constant volume}$ )

- (A)  $P_0$
- (B)  $4P_0$
- (C)  $P_0(4)^\gamma$
- (D)  $P_0(4)^{1/\gamma}$

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**CHEMISTRY**

5. The Bohr orbit radius for the hydrogen atom ( $n = 1$ ) is approximately  $0.530 \text{ \AA}$ . The radius for the first excited state ( $n = 2$ ) orbit is (in  $\text{\AA}$ )

- (A) 0.13
- (B) 1.06
- (C) 4.77
- (D) 2.12

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6. In  $PO_4^{3-}$ , the formal charge on each oxygen atom and the P - O bond order respectively are

- (A) -0.75, 0.6
- (B) -0.75, 1.0
- (C) -0.75, 1.25
- (D) -3, 1.25

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7. The value of  $x$  is maximum for

- (A)  $MgSO_4 \cdot xH_2O$
- (B)  $CaSO_4 \cdot xH_2O$
- (C)  $BaSO_4 \cdot xH_2O$
- (D) All have the same value of  $x$ .

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**MATHEMATICS**

8. Let P be a point on the parabola,  $x^2 = 4y$ . If the distance of P from the centre of the circle,  $x^2 + y^2 + 6x + 8 = 0$  is minimum, then the equation of the tangent to the parabola at P is :

- (A)  $x + 4y - 2 = 0$
  - (B)  $x + y + 1 = 0$
  - (C)  $x - y + 3 = 0$
  - (D)  $x + 2y = 0$
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9. If  $x = \sqrt{2\operatorname{cosec}^{-1}t}$  and  $y = \sqrt{2\operatorname{sec}^{-1}t}$  ( $|t| \geq 1$ ), then  $dy/dx$  is equal to :

- (A)  $y/x$
  - (B)  $-y/x$
  - (C)  $-x/y$
  - (D)  $x/y$
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10. If  $f(x) = \int_0^x t(\sin x - \sin t)dt$  then :

- (A)  $f'''(x) - f''(x) = \cos x - 2x \sin x$
  - (B)  $f'''(x) + f'(x) = \cos x - 2x \sin x$
  - (C)  $f'''(x) + f''(x) = \sin x$
  - (D)  $f'''(x) + f''(x) - f'(x) = \cos x$
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