IIT JAM 2026 Physics Question Paper(Memory Based)

Time Allowed :3 Hours	**Maximum Marks :**70	**Total questions :**5

General Instructions

Read the following instructions very carefully and strictly follow them:

1. Each activity has to be answered in full sentence/s. One word answers will not be given complete credit. Just the correct activity number written in case of options will not be given credit.
2. Web diagrams, flow charts, tables, etc. are to be presented exactly as they are with answers.
3. In point 2 above, just words without the presentation of the activity format, will not be given credit. Use of colour pencils/pens etc. is not allowed. (Only blue/black pens are allowed.)
4. Multiple answers to the same activity will be treated as wrong and will not be given any credit.
5. Maintain the sequence of the Sections/Question Nos./Activities throughout the activity sheet.

1. If

$$A = \begin{pmatrix} 0 & 1 & 1 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}, \quad \text{find } |A^{-1}|.$$

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2. Evaluate:

$$(1 - i\sqrt{3})^3$$

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3. If $\det(A) = -1$ for a 1×1 matrix A, what are the possible eigenvalues?

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4. Minimise the Boolean expression:

$$\bar{A}B\bar{C} + \bar{A}BC + AB\bar{C} + ABC$$

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5. A body of mass 10 kg increases its speed from 2 m/s to 6 m/s in 10 s. Find the average power.

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6. Which of the following statements are true for a first-order phase transition?

(A) $C_p \to \infty$ at T_c

(B) $\frac{\partial G}{\partial P}$ is continuous

(C) Two thermodynamic states are distinct

(D) Entropy is discontinuous at T_c
