Jee Main 2026 B. Planning Memory Based Question Paper

Time Allowed :3 Hours	Maximum Marks :300	Total questions :75

Important Instructions

1. **The test is of 3 hours duration.**
2. **This test paper consists of 75 questions. Each subject (PCM) has 25 questions. The maximum marks are 300.**
3. **This question paper contains Three Parts. Part-A is Physics, Part-B is Chemistry, and Part-C is Mathematics. Each part has only two sections: Section-A and Section-B.**
4. **Section-A: Attempt all questions.**
5. **Section-B: Attempt all questions.**
6. **Section-A (01 – 20):** Contains 20 multiple choice questions which have only one correct answer. Each question carries +4 marks for the correct answer and –1 mark for the wrong answer.
7. **Section-B (21 – 25):** Contains 5 Numerical value-based questions. The answer to each question should be rounded off to the nearest integer. Each question carries +4 marks for the correct answer and –1 mark for the wrong answer.

1. If both the roots of the equation

$$x^2 - 2ax + a^2 - 1 = 0 \quad (a \in \mathbb{R})$$

lie in the interval $(-2, 2)$, then the equation

$$x^2 - (a^2 + 1)x - (a^2 + 2) = 0$$

has:
(1) both roots in $(-3, 0)$
(2) one root in $(0, 2)$ and another root in $(-2, 0)$
(3) one root in $(2, 3)$ and another root in $(-2, 0)$
(4) one root in $(-3, -2)$ and another root in $(0, 2)$

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2. If the system of equations

$$\begin{cases} 2x + y + pz = -1 \\ 3x - 2y + z = q \\ 5x - 8y + 9z = 5 \end{cases}$$

has more than one solution, then $q - p$ is equal to:
(1) 2
(2) -2
(3) 4
(4) -4

3. All the words (with or without meaning) formed using all the five letters of the word GOING are arranged as in a dictionary. Then the word OGGIN occurs at the place which is:

(1) 48^{th}

(2) 49^{th}

(3) 50^{th}

(4) 51^{th}

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4. Let f be a differentiable function satisfying

$$f(x+y) = f(x) + f(y) - xy \quad \textbf{for all } x, y \in \mathbb{R}.$$

If

$$\lim_{h \to 0} \frac{f(h)}{h} = 3,$$

then the value of

$$\sum_{n=1}^{10} f(n)$$

is equal to:

(1) $-\frac{55}{2}$

(2) $\frac{275}{2}$

(3) $-\frac{55}{4}$

(4) $\frac{225}{4}$

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5. The function

$$f(x) = \sin 2x + 2\cos x, \qquad x \in \left(-\frac{3\pi}{4}, \frac{3\pi}{4}\right)$$

has:

(1) no critical point

(2) a point of local maxima and a point of local minima

(3) a point of local maxima and a point of inflection

(4) a point of local minima and a point of inflection
