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JEE Main 2027

Free Mock Test — Sample Paper 1

Subjects	Physics, Chemistry, Mathematics
Questions	15 (5 per subject)
Question Type	Multiple Choice (single correct)
Marking Scheme	+4 for correct, -1 for incorrect
Suggested Time	30 minutes

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Section A — Physics

Q1. A body is thrown vertically upward with a velocity of 20 m/s. Taking $g = 10 \text{ m/s}^2$, the maximum height reached is:

- (A) 10 m
- (B) 20 m
- (C) 30 m
- (D) 40 m

Q2. The SI unit of electric field intensity is:

- (A) Volt
- (B) Volt/metre
- (C) Newton/coulomb²
- (D) Coulomb/metre

Q3. Two resistors of 4Ω and 6Ω are connected in parallel. Their equivalent resistance is:

- (A) 2.4Ω
- (B) 10Ω
- (C) 5Ω
- (D) 24Ω

Q4. The dimensional formula of angular momentum is:

- (A) $[ML^2T^{-1}]$
- (B) $[MLT^{-1}]$
- (C) $[ML^2T^{-2}]$
- (D) $[MLT^{-2}]$

Q5. A convex lens forms a real, inverted, and magnified image when the object is placed:

- (A) Beyond $2F$
- (B) At $2F$
- (C) Between F and $2F$
- (D) At F

Section B — Chemistry

Q6. Which of the following has the highest first ionisation enthalpy?

- (A) Sodium
- (B) Magnesium
- (C) Aluminium
- (D) Neon

Q7. The hybridisation of carbon in methane (CH_4) is:

- (A) sp
- (B) sp^2
- (C) sp^3
- (D) sp^3d

Q8. Which of the following is an example of a redox reaction?

- (A) $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
- (B) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
- (C) $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
- (D) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

Q9. The IUPAC name of $\text{CH}_3\text{-CH}_2\text{-CHO}$ is:

- (A) Propanol
- (B) Propanal
- (C) Propanone
- (D) Propanoic acid

Q10. Which gas is commonly used in the Haber process to manufacture ammonia?

- (A) Oxygen and Nitrogen
- (B) Nitrogen and Hydrogen
- (C) Hydrogen and Oxygen
- (D) Nitrogen and Carbon dioxide

Section C — Mathematics

Q11. If $f(x) = x^2 - 4x + 3$, the roots of $f(x) = 0$ are:

- (A) 1 and 3
- (B) -1 and -3
- (C) 1 and -3
- (D) -1 and 3

Q12. The value of $\sin^2 30^\circ + \cos^2 30^\circ$ is:

- (A) 0
- (B) 1
- (C) $1/2$
- (D) 2

Q13. The derivative of x^3 with respect to x is:

- (A) x^2
- (B) $3x^2$
- (C) $3x$
- (D) $x^2/3$

Q14. The sum of the first 10 terms of the arithmetic progression 2, 4, 6, 8, ... is:

- (A) 90
- (B) 100
- (C) 110
- (D) 120

Q15. If a matrix A is of order 2×3 and matrix B is of order 3×2 , then the order of AB is:

- (A) 2×2
- (B) 3×3
- (C) 2×3
- (D) 3×2

Answer Key

Q.No	Answer	Q.No	Answer	Q.No	Answer
1	B	2	B	3	A
4	A	5	C	6	D
7	C	8	B	9	B
10	B	11	A	12	B
13	B	14	C	15	A

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