

JEE Mains 2026 **Session 1**



DETAILED LIVE PAPER SOLUTIONS

21st Jan - Shift 1

21st Jan. Shift-1 Overall Difficulty

Memory based Questions

Sr. No.	Subject(s)	Difficulty Level
1.	PHYSICS	Moderate - Difficult
2.	CHEMISTRY	Moderate
4.	MATHS	Moderate (Lengthy)
	Overall	Moderate

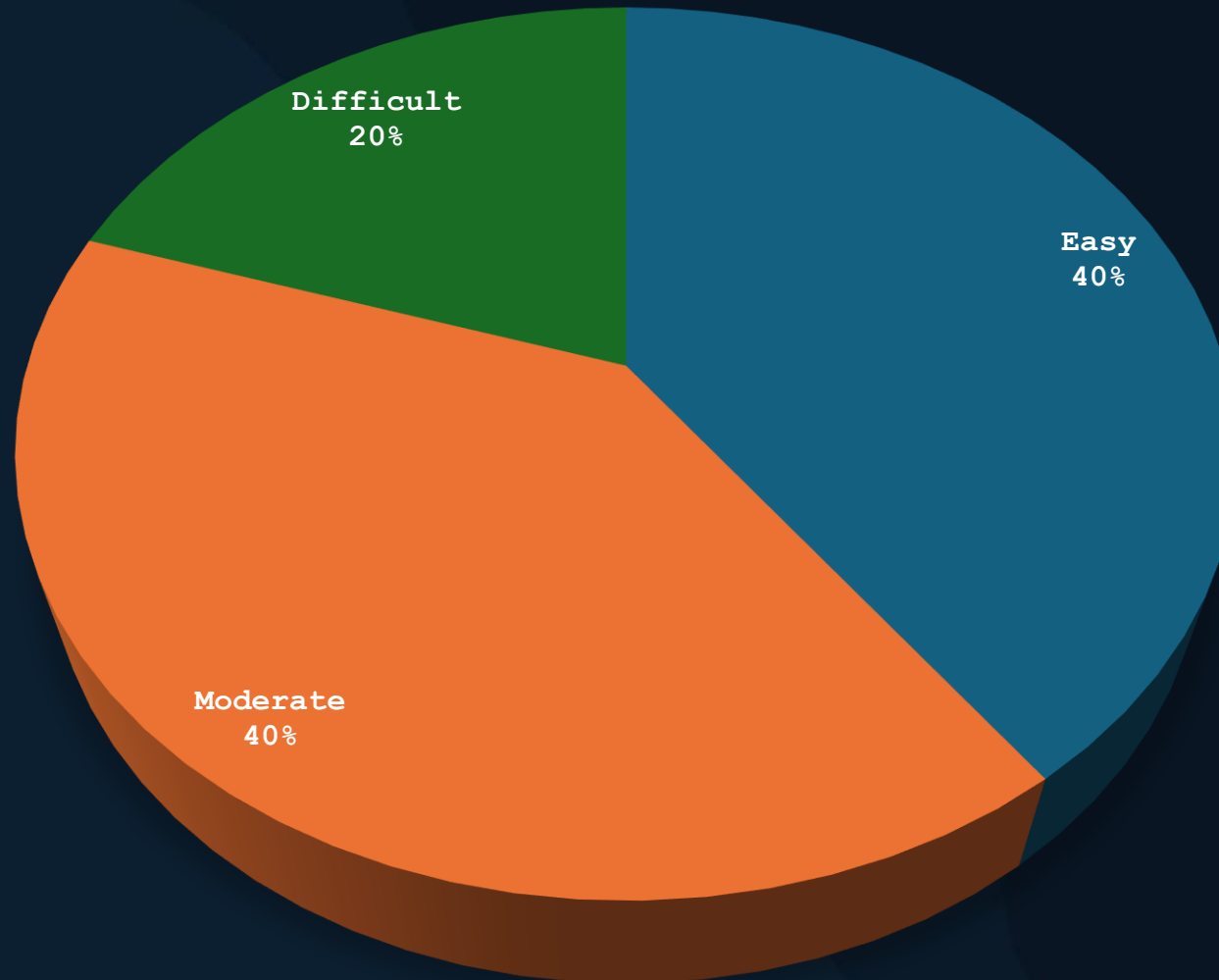
Memory based Questions

How was the Maths Paper?

- A. Easy - 5
- B. Moderate - 4
- C. Moderate but Lengthy - 3
- D. Difficult - 2
- E. Very Difficult - 1

21st Jan. Shift-1 Overall Difficulty

Memory based Questions



21st Jan. Shift-1 Maths Analysis

Memory based Questions

Chapter	Weightage	Chapter	Weightage
Sets and Relations	4.4%	Straight Lines and Pair of Straight Lines	3.6%
Logarithm	0.4%	Circle	2.4%
Quadratic Equation and Inequalities	3.2%	Parabola	4%
Sequences and Series	5.2%	Ellipse	3.2%
Binomial Theorem	4.4%	Hyperbola	0.8%
Matrices and Determinants	7.6%	Functions	3.2%
Permutations and Combinations	5.2%	Limits, Continuity and Differentiability	5.2%
Probability	4.8%	Differentiation	0.4%
Vector Algebra	5.6%	Application of Derivatives	2.4%
3D Geometry	6.4%	Indefinite Integrals	2%
Complex Numbers	4%	Definite Integration	4.8%
Statistics	1.6%	Area Under The Curves	4%
Trigonometric Ratio and Identities	1.6%	Differential Equations	5.6%
Inverse Trigonometric Functions	2.8%		

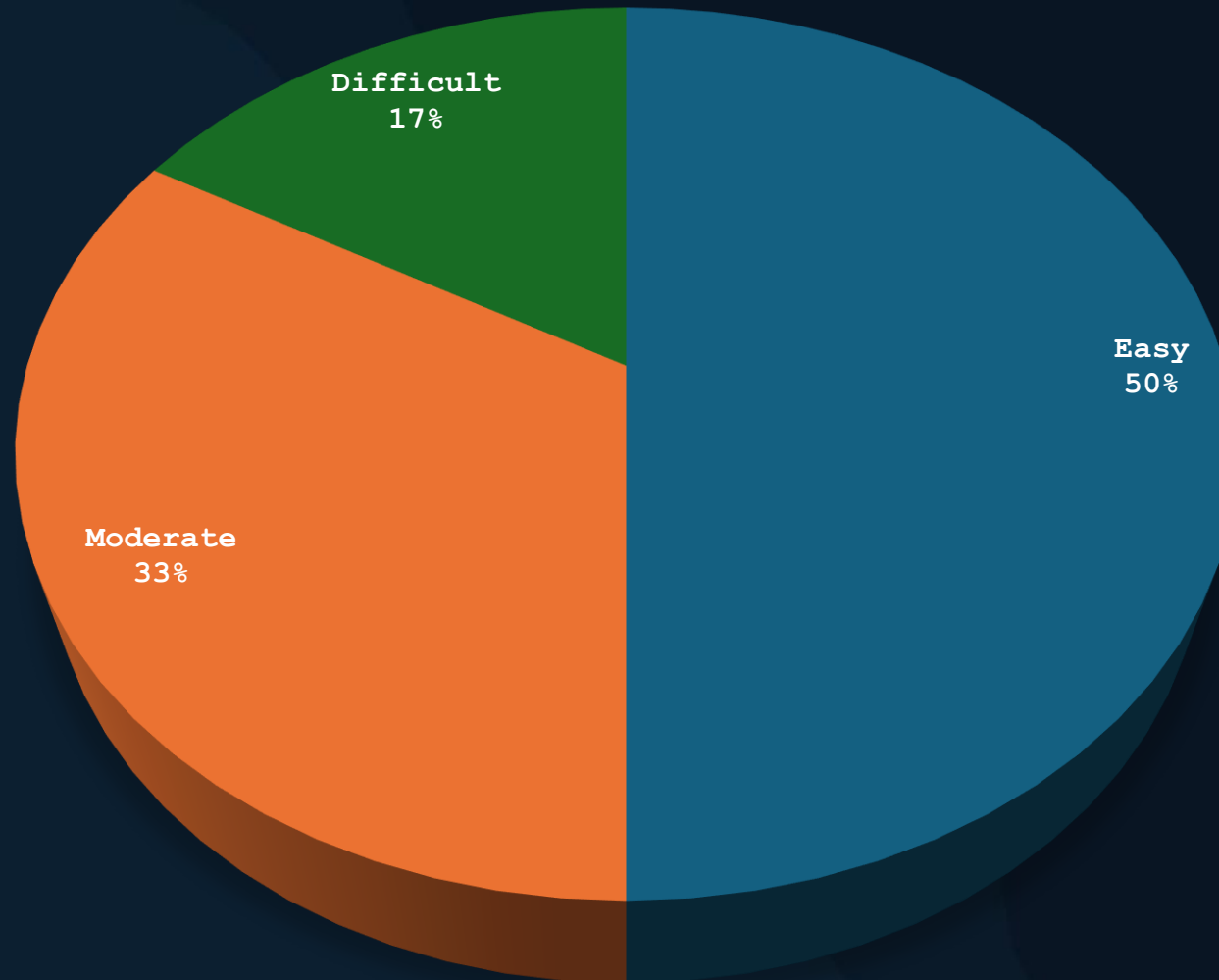
Memory based Questions

How was the Physics Paper?

- A. Easy - 5
- B. Moderate - 4
- C. Moderate but Lengthy - 3
- D. Difficult - 2
- E. Very Difficult - 1

21st Jan. Shift-1 Physics Analysis

Memory based Questions



21st Apr. Shift-1 Physics Analysis

Memory based Questions

Chapter	Weightage	Chapter	Weightage
Current Electricity	8%	Semiconductor	3.67%
Heat and Thermodynamics	7.33%	Rotational Motion	3.33%
Properties of Matter	7%	Work Power & Energy	3.17%
Atoms and Nuclei	6.67%	Electromagnetic Induction	2.83%
Units & Measurements	5.50%	Motion in a Straight Line	2.67%
Electrostatics	5.33%	Simple Harmonic Motion	2.50%
Magnetic Effect of Current	5.17%	Electromagnetic Waves	2.50%
Alternating Current	4.33%	Geometrical Optics	2.50%
Laws of Motion	4%	Capacitor	2.33%
Gravitation	4%	Circular Motion	1.83%
Wave Optics	3.83%	Center of Mass and Collision	1.67%
Dual Nature of Radiation	3.83%	Waves	1.50%

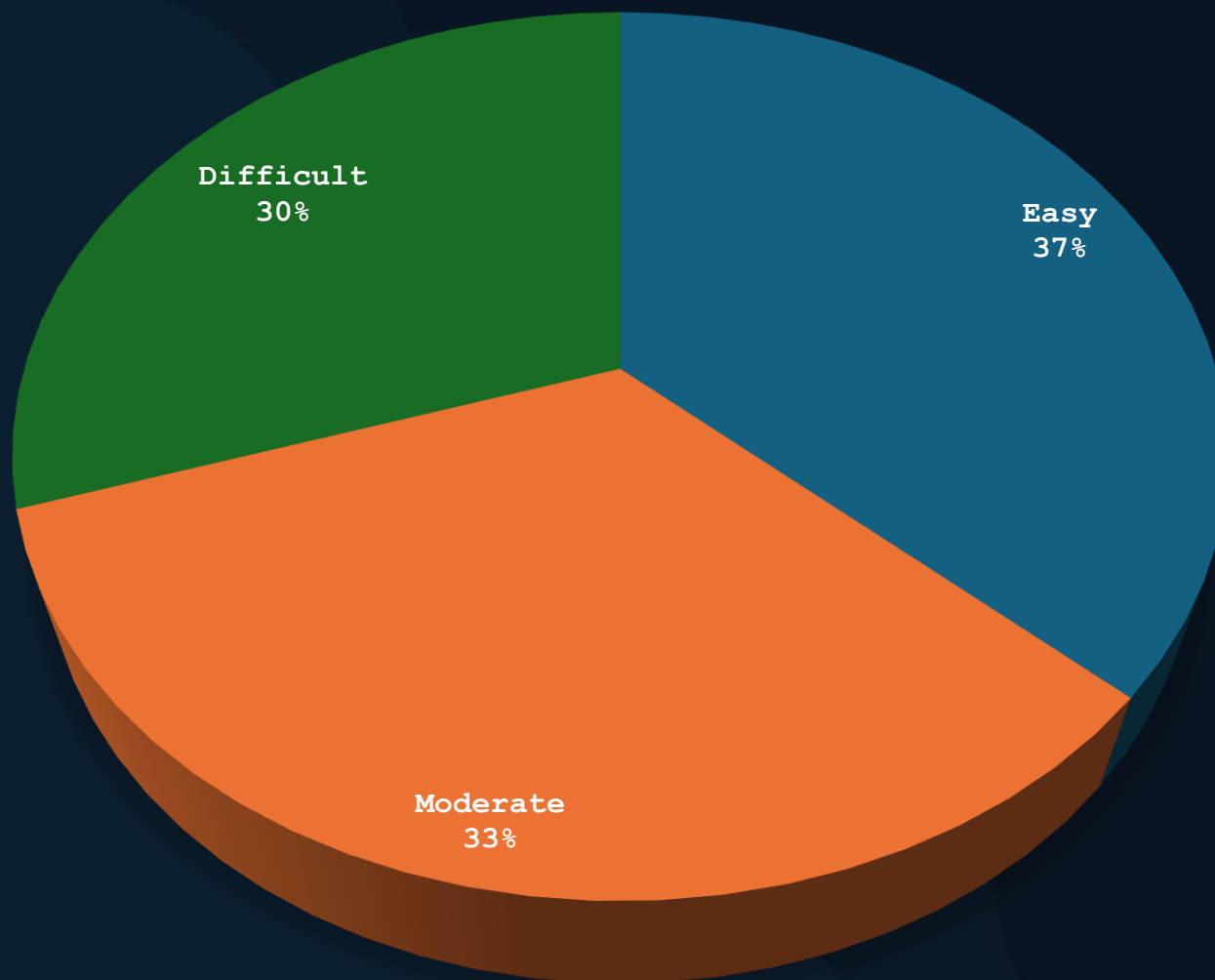
Memory based Questions

How was the Chemistry Paper?

- A. Easy - 5
- B. Moderate - 4
- C. Moderate but Lengthy - 3
- D. Difficult - 2
- E. Very Difficult - 1

21st Jan. Shift-1 Chemistry Analysis

Memory based Questions



21st Jan. Shift-1 Chemistry Analysis

Memory based Questions

Chapter	Weightage	Chapter	Weightage
Some Basic Concepts of Chemistry	5.2 %	d and f Block Elements	5.2 %
Structure of Atom	4.4 %	Coordination Compounds	7.2 %
Redox Reactions	2.4 %	Salt Analysis	2 %
Chemical Equilibrium	2.4 %	Basics of Organic Chemistry	6.8 %
Ionic Equilibrium	3.2 %	Hydrocarbons	5.2 %
Solutions	3.6 %	Haloalkanes and Haloarenes	4.4 %
Thermodynamics	6.8 %	Alcohols, Phenols and Ethers	2 %
Electrochemistry	5.6 %	Aldehydes, Ketones and Carboxylic Acids	5.6 %
Chemical Kinetics and Nuclear Chemistry	5.2 %	Compounds Containing Nitrogen	5.2 %
Periodic Table & Periodicity	6 %	Biomolecules	4.4 %
Chemical Bonding & Molecular Structure	4 %	Practical Organic Chemistry	1.2 %
p-Block Elements	1.6 %		

?

In Carius method, 0.75 g of an organic compound gave 1.2 g of barium sulphate,

Find % of sulphur (molar mass 32 g mol^{-1} .)

Molar mass of barium sulphate is 233 mol^{-1}

(A) 16.48%

B) 4.55%

C) 21.97%

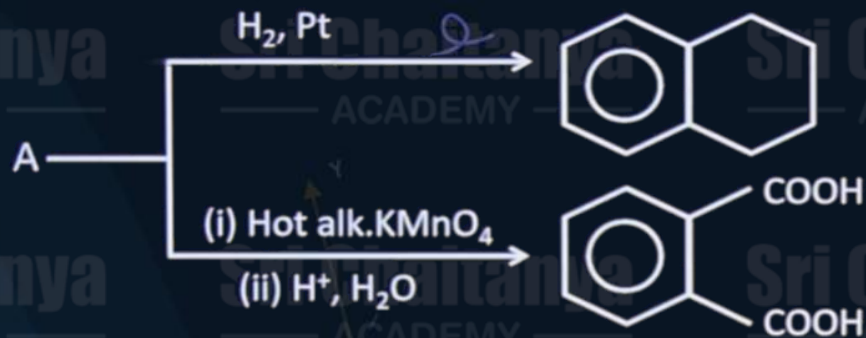
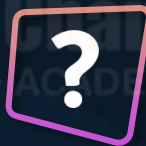
D) 10.30%

?

14.0 g of calcium metal is allowed to react with excess HCl at 1.0 atm pressure & 273 K. Which of the following statement is incorrect ?

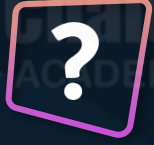
(Molar Mass in g mol^{-1} Ca = 40, Cl = 35.5)

- (a) 0.35 mol of H_2 gas is evolved.
- (b) The limiting reagent is calcium metal.
- (c) 33.3g of CaCl_2 is produced.
- (d) 7.84 L of H_2 gas is evolved.



Which of the following is A :





?

$$\operatorname{cosec} 10^{\circ} - \sqrt{3} \sec 10^{\circ} =$$

- a) 8
- b) 6
- c) 4
- d) 2

?

The Hyperbola and ellipse $\frac{x^2}{36} + \frac{y^2}{16} = 1$ have same foci and eccentricity of Hyperbola is 5 then length of latus rectum of hyperbola is

? $6 \int_0^{\pi} |\sin 3x + \sin 2x + \sin x| dx =$

?

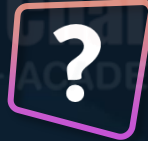
 $x^2 + x + 1 = 0$, value of $\left(x + \frac{1}{x}\right)^4 + \left(x^2 + \frac{1}{x^2}\right)^4 + \left(x^3 + \frac{1}{x^3}\right)^4 + \dots +$ $\left(x^{25} + \frac{1}{x^{25}}\right)^4$ is

A) 175

B) 162

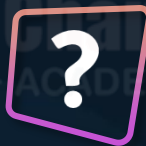
C) 145

D) 128



The number of relations, defined on the set $\{a, b, c, d\}$ which are both reflexive & symmetric is equal to

- A) 16
- B) 1024
- C) 64
- D) 256



For some $\alpha, \beta \in R$ let $A = \begin{bmatrix} \alpha & 2 \\ 1 & 2 \end{bmatrix}$ & $B = \begin{bmatrix} 1 & 1 \\ 1 & \beta \end{bmatrix}$ be such that

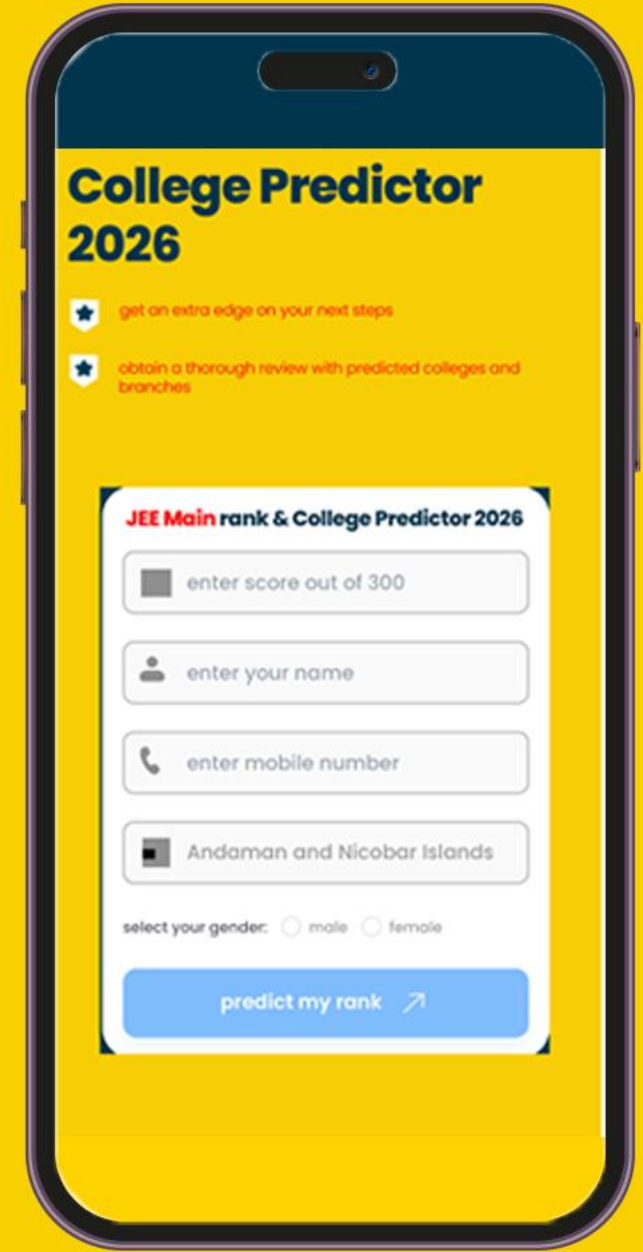
$A^2 - 4A + 2I = B^2 - 3B + I = 0$ then $\left(\det(\text{adj}(A^3 - B^3)) \right)^2$ is
equals to

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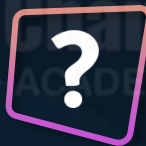
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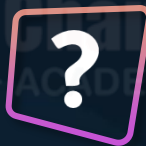
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A conducting circular loop of area is placed Perpendicular to a magnetic field which varies as tesla. If the resistance of the they average thermal energy dissipated in the loop in one period is -



In a double slit experiment the distance b/w the Slits 0.1 cm and the screen is placed at 50 cm from the slit plane. when one slit is covered with a transparent sheet having thickness t and refractive index $n=1.5$ the central fringe shifts by 0.2 cm . The value of t is



A current carrying solenoid is placed vertically and a particle of mass m with charge Q is released from rest. The particle moves along the axis of solenoid. If g is acc due to gravity than the acc of the charge particle.

a. $a=g$

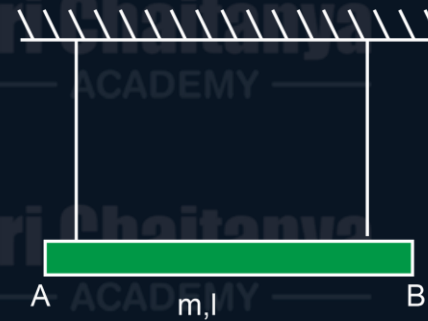
b. $a=0$

c. $0 < a < g$

d. $a > g$



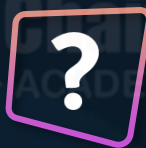
A rod of mass m and length l is attached to two ideal strings, find tension in left string just after right string is cut.





Which logic gate is given in the figure?

- a. XOR
- b. NOR
- c. NAND
- d. OR



Find dimensions of $\frac{A}{B}$ if $\left(P + \frac{At^2}{B}\right) + \frac{1}{2}\rho V^2 = \text{constant}$, where $P \rightarrow$ pressure, $\rho \rightarrow$ density, $V \rightarrow$ speed.

a) $ML^1 T^{-4}$

b) $ML^{-1} T^{-4}$

c) $ML^2 T^{-4}$

d) $ML^{-1} T^{-2}$



A light wave described by $E = 60(\sin(3 \times 10^{15}t) + \sin(12 \times 10^{15}t))$ (in SI unit), fall on a metal surface of work function 2.8 eV. The maximum

KE of ejected photo electron is approximate (in eV)

$$h = 6.6 \times 10^{-34} \text{ Js}$$

a. 7.8

b. 6.0

c. 3.8

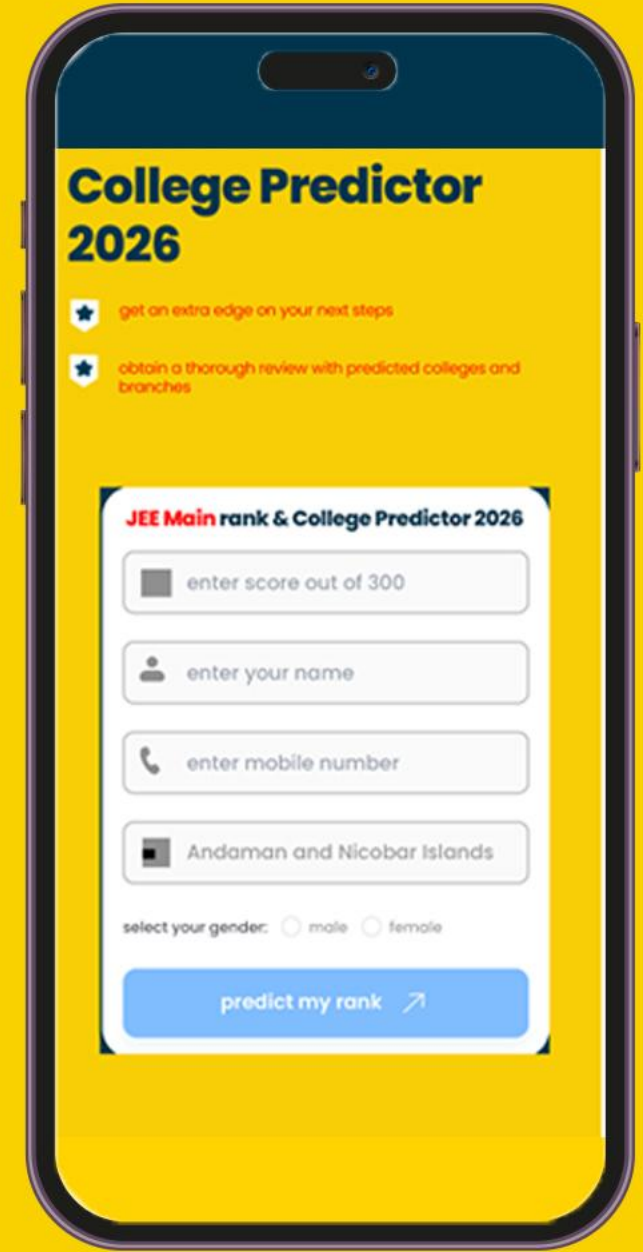
d. 5.6

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MnO_4^{2-} in acidic medium, disproportionates to

A) Mn_2O_7 & MnO

B) MnO_4^- & MnO

C) MnO_4^- & MnO_4

D) MnO_4^- & MnO_2

?

Which of the following is the correct order with respect to the property indicated?

- a) $\text{Cl} > \text{F}$ (Ionisation energy)
- b) $\text{K}_2\text{O} > \text{Na}_2\text{O} > \text{Al}_2\text{O}_3$ (Basic nature)
- c) $\text{K} > \text{Na} > \text{Al} > \text{Mg}$ (Metallic character)
- d) None of these

?

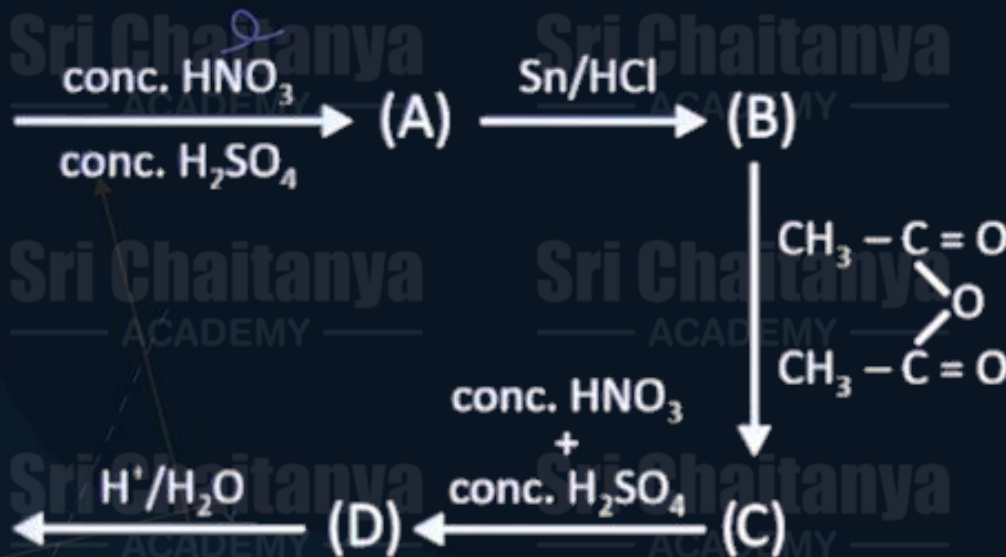
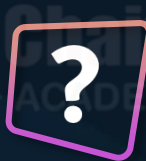
Given below are two statements.

Statement I : Arginine and Tryptophan are essential amino acids.

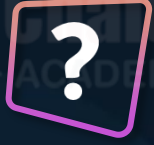
Statement II: Glycine does not have any chiral carbon.

In the light of the above statements, which is the correct option.

- a) Both statement-I and statement-II are correct
- b) Both statement-I and statement-II are incorrect
- c) Statement-I is correct and statement-II is incorrect
- d) Statement-I is incorrect and statement-II is correct



% of N in E = ?

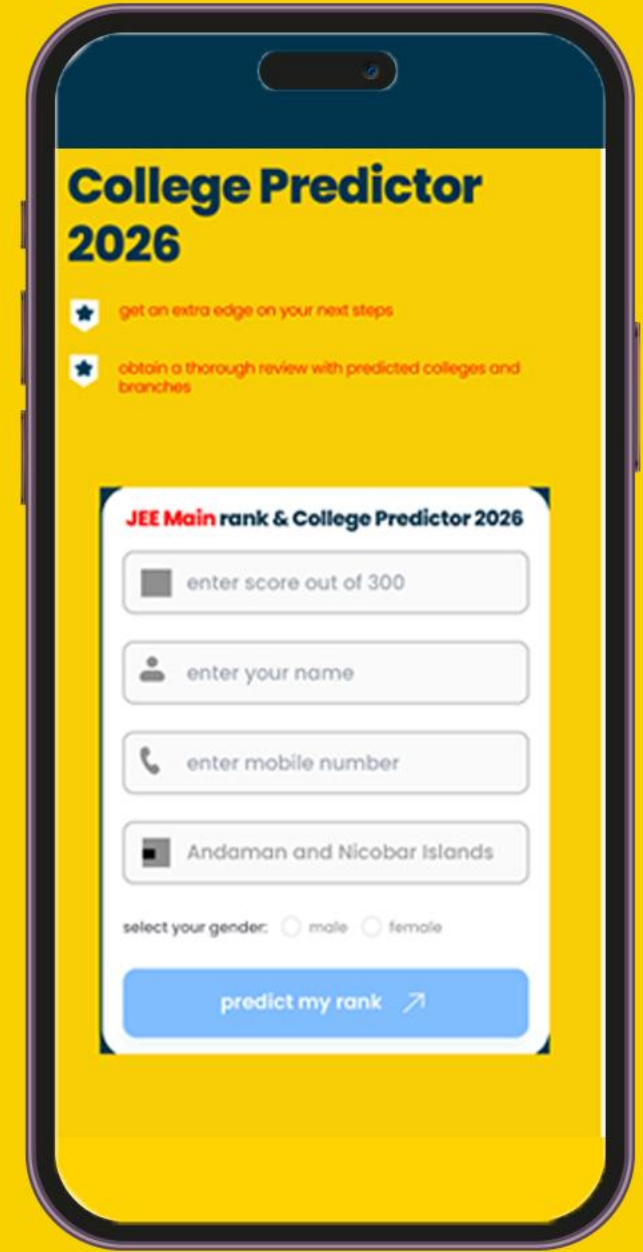


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