

MHT CET 2026 Mathematics Answer Key PDF

Chemistry

- Option (d) Boiling point of monomer
Explanation: Polymers are categorized on the basis of their source, structure, polymerization mode, and molecular forces. The physical boiling point of the isolated monomer is not used as a parameter for polymer classification.
- Option (d) Boiling point of monomer
Explanation: Polymer classification systems utilize parameters such as the origin, chain structural geometry, and addition or condensation synthesis modes, but do not rely on monomeric boiling points.
- Option (b) 2
Explanation: In a Body-Centered Cubic (BCC) lattice, the total number of unit particles is calculated as $8 \times \frac{1}{8}$ (from corner positions) + 1×1 (from the center position), which equals 2.
- Option (c) 2,4,6-Tribromophenol
Explanation: Due to the high activation of the benzene ring by the hydroxyl group, phenol reacts rapidly with bromine water to undergo electrophilic substitution, forming a white precipitate of 2,4,6-tribromophenol.
- Option (b) $\text{S cm}^2 \text{ mol}^{-1}$
Explanation: Molar conductivity is given by $\Lambda_m = \frac{\kappa}{C}$. When conductivity κ is measured in S cm^{-1} and concentration C is in mol cm^{-3} , the practical SI-derived unit is $\text{S cm}^2 \text{ mol}^{-1}$.

Mathematics

- Option (d) (5, 3)
Explanation: Calculating the inverse yields $A^{-1} = \begin{bmatrix} -1 & 4 \\ -1 & 3 \end{bmatrix}$ and squaring it gives $(A^{-1})^2 = \begin{bmatrix} -3 & 8 \\ -2 & 5 \end{bmatrix}$.
Adding matrix B yields $\begin{bmatrix} 3 & -5 \\ 3 & -5 \end{bmatrix}$, meaning $3x - 5y = 0$, which is satisfied by (5, 3).
- Option (a) $\frac{x}{2}[\sin(\log x) - \cos(\log x)] + C$
Explanation: Using the substitution $t = \log x \implies dx = e^t dt$, the integral transforms to $\int e^t \sin t dt$. Integrating by parts twice gives $\frac{e^t}{2}[\sin t - \cos t] + C$, which simplifies back to Option (a).
- Option (c) 16
Explanation: For any square matrix A of order n , the determinant of its adjoint is given by the identity $|\text{adj } A| = |A|^{n-1}$. For $n = 3$ and $|A| = 4$, we obtain $|B| = 4^2 = 16$.
- Option (c) 3
Explanation: For the function to be continuous at $x = 0$, the limit of $f(x)$ as $x \rightarrow 0$ must equal $f(0)$. Since $\lim_{x \rightarrow 0} \frac{k \sin x}{x} = k(1) = k$, setting this equal to $f(0) = 3$ yields $k = 3$.
- Option (a) $r \rightarrow ((\sim p) \wedge q)$
Explanation: The converse of a conditional logical statement of the form $P \rightarrow Q$ is obtained by

swapping the antecedent and the consequent, which yields $Q \rightarrow P$. For $((\sim p) \wedge q) \rightarrow r$, this gives $r \rightarrow ((\sim p) \wedge q)$.

11. Option (b) $-(2 + \sqrt{3})$

Explanation: Using the tangent addition identity, we expand $\tan(105^\circ)$ as $\tan(60^\circ + 45^\circ) = \frac{\sqrt{3}+1}{1-\sqrt{3}}$.

Rationalizing the denominator of this fraction simplifies the value directly to $-(2 + \sqrt{3})$.

Physics

12. Option (c) 1

Explanation: In an AC circuit consisting of only a pure resistor, the alternating voltage and current remain perfectly in phase ($\phi = 0$). This zero phase difference gives a power factor of $\cos(0) = 1$.

13. Option (b) 20 m

Explanation: Using the third equation of motion, $v^2 = u^2 - 2gh$, and substituting the final velocity $v = 0$ at maximum height, the initial velocity $u = 20$ m/s, and $g = 10$ m/s² yields $h = 20$ m.

14. Option (a) $\frac{8\sqrt{2}}{3}$ cm

Explanation: The maximum speed is $v_{\max} = A\omega = 6$ cm/s, which gives $\omega = 1.5$ rad/s for $A = 4$ cm.

Substituting this into the velocity equation $v = \omega\sqrt{A^2 - x^2}$ with $v = 2$ cm/s yields $x = \frac{8\sqrt{2}}{3}$ cm.

Biology

15. Option (c) Enterokinase

Explanation: Enterokinase, an enzyme secreted by the mucosal cells of the duodenum, initiates protein digestion in the small intestine by cleaving trypsinogen to form the active proteolytic enzyme trypsin.