

MHT CET 2026 Mathematics Memory Based Question Paper PDF

Mathematics

1. If z be a complex number such that $|z| + z = 2 + i$, then find the value of $|z|$.
 - (a) $\frac{1}{2}$
 - (b) $\frac{3}{4}$
 - (c) $\frac{5}{4}$
 - (d) 1
2. If $\vec{a} = 2\hat{i} + \hat{j} + 3\hat{k}$ and $\vec{b} = p\hat{i} + 2\hat{j} + 2\hat{k}$ are perpendicular to each other, find the value of p .
 - (a) 4
 - (b) -4
 - (c) 2
 - (d) -2

Chemistry

3. The solubility product of AgBr is 4.9×10^{-13} at a certain temperature. Calculate the molar solubility of AgBr.
 - (a) $4 \times 10^{-6} \text{ mol dm}^{-3}$
 - (b) $4 \times 10^{-7} \text{ mol dm}^{-3}$
 - (c) $7 \times 10^{-7} \text{ mol dm}^{-3}$
 - (d) $3 \times 10^{-8} \text{ mol dm}^{-3}$
4. Find the concentration of sodium acetate when added to 0.1 M solution of acetic acid to form a buffer solution of pH = 5.5. (Given: pK_a of $\text{CH}_3\text{COOH} = 4.5$)
 - (a) 0.1 M
 - (b) 0.01 M
 - (c) 1.0 M
 - (d) None of these
5. Which of the following equations gives the combined relationship of Boyle's law and Charles's law?
 - (a) $\frac{P_1 V_2}{T_1} = \frac{P_2 V_1}{T_2}$
 - (b) $n = \frac{RT}{PV}$
 - (c) $\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$
 - (d) $P = \frac{RT}{nV}$
6. Which of the following forces is involved in dinitrogen?

- (a) Dipole-dipole interaction
 - (b) Dipole-induced dipole interaction
 - (c) London dispersion force
 - (d) Hydrogen bonding
7. Which of the following is a correct set of four quantum numbers for a $4d$ orbital?
- (a) $(4, 3, 2, 1/2)$
 - (b) $(4, 2, 1, 1/2)$
 - (c) $(4, 1, 2, 1/2)$
 - (d) None of these
8. Which of the following mixtures of gases represent water gas?
- (a) $\text{CO} + \text{H}_2$
 - (b) $\text{CO}_2 + \text{H}_2$
 - (c) $\text{H}_2\text{O} + \text{CH}_4$
 - (d) $\text{H}_2 + \text{O}_2$
9. Which of the following electrolytic solutions of the same electrolyte has maximum electrolytic conductivity at the same temperature?
- (a) 0.2 mole of solute is dissolved in 250 ml
 - (b) 0.3 mol in 600 ml
 - (c) 0.6 mol in 1000 ml
 - (d) 0.8 mole in 2000 ml

Physics

10. In an isothermal expansion of an ideal gas, the heat supplied to the gas is:
- (a) entirely used to increase internal energy
 - (b) entirely used to do work
 - (c) partly used to do work and partly to increase internal energy
 - (d) none of the above