MHT CET 2026 Mathematics Memory Based Question Paper PDF

Chemistry

1. Which of the following statement is correct for vapor pressure?

   (1) Vapor pressure decreases with increase in temperature
   (2) Vapor pressure is independent of temperature
   (3) Vapor pressure increases with increase in temperature
   (4) Vapor pressure becomes zero at high temperature

2. Find the number of atoms present in 11.2 L of nitrogen gas at STP.

   (1) 3.01×10^{23}
   (2) 6.02×10^{23}
   (3) 12.04×10^{23}
   (4) 1.204×10^{23}

3. Which of the following is true for entropy?

   (1) Entropy decreases with increase in randomness
   (2) Entropy is the measure of randomness of a system
   (3) Entropy remains constant in every process
   (4) Entropy is always zero for gases

4. Calculate the solubility in mol dm^{-3} of sparingly soluble salt BaBr if its solubility product is 4.9×10^{-13} at the same temperature.

   (1) 7×10^{-7}
   (2) 7.5×10^{-7}
   (3) 8×10^{-7}
   (4) 4.9×10^{-7}

5. Calculate the pH of 0.01 M strong dibasic acid.

   (1) 5.5
   (2) 2.5
   (3) 2.0
   (4) 1.7

6. The solubility product of $PbCl_2$ at 298 K is 3.2×10^{-5}. What is its solubility in mol dm^{-3}?

   (1) 8×10^{-6}
   (2) 2×10^{-2}
   (3) 5.6×10^{-3}

(4) 5×10^{-2}

7. Identify Base_2 for the following equation according to Brønsted-Lowry theory:

$$\text{HCl(aq)} + \text{H}_2\text{O(l)} \rightleftharpoons \text{H}_3\text{O}^+\text{(aq)} + \text{Cl}^-\text{(aq)}$$

(1) $\text{H}_3\text{O}^+\text{(aq)}$
(2) $\text{H}_2\text{O(l)}$
(3) $\text{Cl}^-\text{(aq)}$
(4) HCl(aq)

8. What is the pH of 2×10^{-3} M solution of a monoacidic weak base if it ionises to the extent of 5%?

(1) 14
(2) 10
(3) 4
(4) 2

9. A certain mass of a gas occupies a volume of 2.5 dm^3 at NTP. Calculate the change in volume of gas at the same temperature if pressure of gas is changed to 1.25 atm.

(1) 3.0 dm^3
(2) 0.5 dm^3
(3) 4.5 dm^3
(4) 1.5 dm^3

10. Identify conjugate acid and conjugate base for HCO_3^- ion respectively:

(1) CO_3^{2-} and H_2CO_3
(2) H_2CO_3 and CO_2
(3) CO_2 and H_2CO_3
(4) H_2CO_3 and CO_3^{2-}