CHEMISTRY

BOOKS - KALYANI CHEMISTRY (ENGLISH)

SELF ASSESSMENT PAPER -4

Questions

1. Fill in the blanks

Radius ratio is the ratio of the radius of .... to

that of..............

2. The decomposition of NH_3 on platinum surface is zero order reaction. What are the rates of production of N_2 and H_2, if k $=$ 2.5×10^{-4} mol L s^{-1}?

3. Consider a certain reaction A Products with $k = 2.0 \times 10^{-2} s^{-1}$. Calculate the concentration of A remaining after 100 s if the initial concentration of A is 1.0 mol L^{-1}.

4. What will be the vapour pressure of a solution containing 5 moles of sucrose $(C_{12}H_{22}O_{11})$ in 1 kg of water, if the vapour

pressure of pure water is 4.57 mm of Hg ?

[C=12, H= 1, O=16]

> ▶ **View Text Solution**

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5. A solution of lactose containing 8.45 g of lactose in 100 g of water has a vapour pressure of 4.559 mm of Hg at $0°C$. If the vapour pressure of pure water is 4.579 min Hg, calculate the molecular weight of lactose.

> ▶ **View Text Solution**

6. Describe how the following changes are brought about:

(i) Pig iron into steel

(ii) Zinc oxide into metallic zinc,

(iii) Impure titanium into pure titanium.

7. A current of 10 A is passed for 80 min and 27 seconds through a cell containing dilute sulphuric acid.

(i) How many moles of oxygen gas will be

liberated at the anode ?

(ii) Calculate the amount of zinc deposited at the cathode when another cell containing $ZnSO_4$ solution is connected in series (Zn=65).
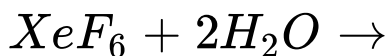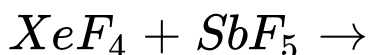
8. A conductivity cell has a cell constant of 0.5 cm^{-1}. This cell when filled with 0.01 M sodium chloride chloride at $25°C$. solution has a resistance of 384 ohm at $25°C$.

Calculate the equivalent conductivity of 0.01 M sodium chloride at $25°C$.

9. (i) Complete the following chemical reactions :

$$XeF_4 + SbF_5 \rightarrow$$

$$XeF_6 + 2H_2O \rightarrow$$

(ii) Explain the following:

(A) NO_2 rapidly forms a dimer.

(B) $BiCl_3$ is more stable than $BiCl_5$.

(C) Why does PCI_3 fume in moisture ?