



CHEMISTRY

BOOKS - KALYANI CHEMISTRY (ENGLISH)

SELF ASSESSMENT PAPER-8

Questions

1. Henry's law constant for the molality of methane in benzene at 298 K is $4.27 x s 10^5$ mm

Hg. Calculate the solubility of methane in

benzene at 298 K under 760 mm Hg.



2. The rate constant for a first order reaction is 60 s^{-1} . How much time will it take to reduce the initial concentration of the reactant to its 1/16th value?

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3. In a reaction, $2A \rightarrow$ Products, the concentration of A decreases from 0.5 mol L^{-1} to 0.4 mol L^{-1} in 10 minutes. Calculate the rate during this interval ?

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4. 100 g of liquid A (molar mass 140 g mol^{-1}) was dissolved in 1000 g of liquid B (molar mass 180 g mol^{-1}). The vapour pressure of pure liquid B was found to be 500 Torr.

Calculate the vapour pressure of pure liquid A and its vapour pressure in the solution if the total vapour pressure of the solution is 475 Torr.



5. Why does sodium chloride on heating with

sodium vapours acquire yellow colour ?

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6. An aqueous solution of 2% non-volatile solute exerts a pressure of 1,004 bar at the normal boiling point of the solvent: What is the molar mass of the solute ?



7. Depict the galvanic cell in which the reaction $Zn(s)+2Ag+(aq) o Zn^{2+}(aq)+2Ag(s)$ takes place. Further show:

Which of the electrode is negatively charged ?





8. How much electricity is required in coulomb

for the oxidation of (i) 1 mol of H_2O to O_2 (ii)

1 mol of FeO to Fe_2O_3

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9. Why does the reactivity of nitrogen differ

from phosphorus ?

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10. Illustrate how copper metal can give
different products on reaction with HNO₃
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11. Bond angle in ${PH_4^+}$ is higher than that in

 PH_5 Why?

