CLASS   : XII   UNIT TEST -III   TIME   : 1.00 hr
SUBJECT : CHEMISTRY   MARKS   : 40
                                    (7.Chemical kinetics &
                          11.Hydroxy compounds and ethers(104 to 123))

PART-I

CHOOSE THE CORRECT ANSWER :   10 X 1 = 10

1. The rate constant of a reaction is 5.8×10^{-2} s^{-1}. The order of reaction is :
   (a)   First order   (b) Zero order
   (c)   Second order   (d) Third order

2. The addition of a catalyst during a chemical reaction alters, which of the following   quantities
   (a) Entropy   (b) Internal energy
   (c) Activation energy   (d) Enthalpy

3. The decomposition of phosphine (PH_3) on tungsten at low pressure is a first   Order reaction. It is because the :
   (a) rate is proportional to the surface coverage
   (b) rate is inversely proportional to the surface coverage
   (c) rate is independent of the surface coverage
   (d) rate of decomposition is slow

4. If the initial concentration of the reactant is doubled, the time for half reaction is also   doubled. Then the order of the reaction is
   (a) Zero   (b) one   (c) Fraction   (d) none

5. If 75% of a first order reaction was completed in 60 minutes , 50% of the same reaction under the same conditions   would be completed in
   (a) 20 minutes   (b) 30 minutes   (c) 35 minutes   (d) 75 minutes

6. The Unit of Zero order rate constant is
   (a) litre mol^{-1} sec^{-1} (b) mol $litre^{-1}$ sec^{-1} (c) sec^{-1} (d) $litre^2$ sec^{-1}

7. The rate law for a reaction is rate = k $[A]^{1/2}$ $[B]^{3/2}$. Then the order of the reaction is
   (a) 0   (b) 1   (c) 1.5   (d) 2

8. Carbolic acid is :
   (a) Phenol   (b) Picric acid
   (c)   Benzoic acid   (d) Phenyl acetic acid

9. Williamson synthesis of preparing dimethyl ether is a/an
   (a) Electrophilic substitution reaction   (b) S_N1 reaction
   (c) S_N2 reaction   (d) Electrophilic addition reaction

10. Ethylene glycol on treatment with periodic acid gives _____
    (a) acetaldehyde   (b) propionaldehyde
    (c) formaldehyde   (d) butyraldehyde

PART-II

ANSWER THE FOLLOWING ANY FOUR QUESTIONS.   **4 X 2 = 8**

11. Write Arrhenius equation and explain the terms involved ?

12. Define half life of a reaction

13. write two differences between rate and rate constant of a reaction ?

14. Give two examples for the first order reactions

15. Write are the uses of glycerol ?

16. How is ethylene glycol converted into 1,4 dioxane ?

PART-II

ANSWER THE FOLLOWING ANY FOUR QUESTIONS.   **4 X 3 = 12**

(COMPULSORY QUESTION NO : 22)

17. What is pseudo first order reaction? Give an example

18. Write a short on the biological oxidation ?

19. write two differences between order and molecularity of a reaction ?

20. Give three examples for zero order reaction

21. How are the following conversion effected?

   i) ethylene glycol → acetaldehyde   ii) glycerol → acrolein

22. Show that in case of first order reaction , the time required for 99.9% completion
is Nearly ten times the time required for half completion of the reaction .

PART-IV

ANSWER ALL THE QUESTION   **2 X 5 = 10**

23. a) Derive integrated rate law for a first order reaction A → product.(5)

(OR)

   b) i) derive integrated rate law for a zero order reaction A → product.(3)

     ii) Identify the order for the following reactions.(2)

       i) rusting of iron   ii) $2A + 3B \longrightarrow$ products ; $K[A]^{\frac{1}{2}}[B]^{2}$

24. a) Explain Lucas test to differentiate primary , secondary and tertiary alcohols.(5)

(OR)

b) How to distinguish 1^{0} , 2^{0} , and 3^{0} alcohol by victor Meyer test.(5)

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