SHRI VIDHYABHARATHI MAT.HR.SEC SCHOOL
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CLASS: XII **CHEMISTRY SLIP TEST** **MARKS:40**
DATE:28.10.2020 **TIME:1.00HRS**

I. Choose the correct answer : **10 x 1 = 10**

1. For the reaction 2A+ 3B $\rightarrow$ 4C the rate of reaction may be represented as

   a) r= $-2\frac{d[A]}{dt} = -3\frac{d[B]}{dt} = 4\frac{d[C]}{dt}$ b) r= $-6\frac{d[A]}{dt} = -4\frac{d[B]}{dt} = 3\frac{d[C]}{dt}$

   c) r= $-\frac{1}{2}\frac{d[A]}{dt} = \frac{1}{3}\frac{d[B]}{dt} = \frac{1}{4}\frac{d[C]}{dt}$ d) r= $-\frac{1}{2}\frac{d[A]}{dt} = \frac{1}{3}\frac{d[B]}{dt} = \frac{1}{4}\frac{d[C]}{dt}$

2. For a reaction $\frac{1}{2}$A $\rightarrow$2B, rate of disappearance of 'A' is related to the rate of appearance of 'B' By the expression :

   a) $-\frac{d[A]}{dt} = \frac{1}{2}\frac{d[B]}{dt}$ b) $-\frac{d[A]}{dt} = \frac{1}{4}\frac{d[B]}{dt}$

   c) $-\frac{d[A]}{dt} = \frac{d[B]}{dt}$ d) $-\frac{d[A]}{dt} = 4\frac{d[B]}{dt}$

3. The reaction $2N_2O_5 \rightarrow 2NO_2 + O_2$ follows first order kinetics. Hence the molecularity of the reaction is

   a) Unimolecular b) pseudo molecular

   c) Bimolecular d) None of the above

4. For an elementary reaction , 2A + B $\rightarrow$C + D the molecularity is

   a) Zero b) One c) Two d) Three

5. A wrong statement about order is

   a)it may be zero or fractional or integral values

   b)it can be predicted interms of stoichiometry

   c)simple reactions possess low values of order

   d)higher order reactions are rare

6. Which one of the following is an example for first order reaction

   a) Iodination of acetone

   b) decomposition of hydrogen peroxide

   c) decomposition of HI on gold surface

   d) oxidation of KI by potassium persulphate

7. The relationship between half-life period ($t_{1/2}$) and first order rate constant is

   a) $t_{1/2}$ = 0.693k b) $t_{1/2} = \frac{0.963}{k}$

   c) $t_{1/2} = \frac{0.693}{k}$ d) $t_{1/2} = \frac{k}{0.693}$

8. Which one of the following statements for the order of a reaction is incorrect?
   a) Order of reaction is always whole number
   b) Order can be determined only experimentally
   c) Order is not influenced by stoichiometric coefficient of the reactants
   d) Order of reaction is sum of power to the concentration terms of reactants to express the rate of reaction
9. In a first order reaction the concentration of the reactant is increased by 2 times. The rate of the reaction is increased by
   a) 2 times b) 4 times c) 10 times d) 6 times
10. The unit of zero order rate constant
   a) mol lit^{-1} sec^{-1} b) sec^{-1} c) mol^{-1} lit sec^{-1} d) none of the above

II. Answer the following Questions : 4 x 2 = 8

11. What is an elementary reaction? Give the differences between order and molecularity of a reaction.
12. Explain the rate determining step with an example.
13. Define rate law and rate constant
14. Define average rate of reaction and instantaneous rate

III. Answer the following Questions : 4 x 3 = 12

15. Explain pseudo first order reaction with an example
16. What is chemical kinetics?
17. Give the relation between order and unit of rate constant
18. Define half- life period of a reaction or time for half change of a reaction.

IV. Answer the following Questions : 2 x 5 = 10

19. Derive integrated rate equation for a first order reaction or Derive an expression for the rate constant or velocity constant of a first order reaction

20. A first order reaction takes 8 hours for 90% completion. Calculate the time required for 80% completion.(log5=0.6989;log 10=1)