Maximum Marks: 10   **(OBJECTIVE TYPE)**   Time Allowed: 10 Min.

NOTE: Tick The Correct Option:

1. The hydrolysis of sugar is catalyzed by:
   (a) Urease   (b) Invertase   (c) Zymase   (d) Diastase

2. Half-life period of any reaction is inversely proportional to the initial concentration of the reactant raised to power _____ than the order of the reaction.
   (a) One more   (b) One less   (c) Two more   (d) Two less

3. If the rate equation of the reaction $2NO + 2H_2 \rightarrow 2H_2O + N_2$ is Rate $= k[H_2]^1[NO]^2$. By doubling the concentration of NO, the rate becomes:
   (a) 2 times   (b) 4 times   (c) 8 times   (d) 9 times

4. In sunlight, the reaction between H_2 and Cl_2 is:
   (a) Slow   (b) Moderate   (c) Explosive   (d) Negligible

5. The reaction between H_2 and O_2 to form water proceeds rapidly in the presence of _____ as catalyst.
   (a) Pt   (b) $CuCl_2$ (c) MnO_2 (d) Ni

6. Which one is the example of homogeneous catalysis?
   (a) Oxidation of SO_2 in contact process   (b) Hydrolysis of ester
   (c) Oxidation of NH_3 to form NO   (d) Hydrolysis of vegetable oil

7. The oxidation of NH_3 to NO is catalyzed by:
   (a) Ni   (b) Pd   (c) Pt   (d) All

8. In the presence of Cu, formic acid is decomposed into:
   (a) $H_2O + CO$ (b) $H_2 + CO$ (c) $H_2O + CO_2$ (d) $H_2 + CO_2$

9. In Haber's process, the activity of catalyst is poisoned by:
   (a) CO   (b) S   (c) As   (d) Si

10. The first enzyme was prepared in the laboratory in:
    (a) 1869   (b) 1769   (c) 1965   (d) 1959

Maximum Marks: 20   **(SUBJECTIVE TYPE)**   Time Allowed: 50 Min.

SECTION-I

Q.2: Give brief answers to the following questions: **(12)**

  i. Name the factors which affect the rate of reaction.

 ii. Define catalyst and catalysis.

iii. A catalyst may be changed physically at the end of reaction. Explain with example.

 iv. What are the types of catalytic poisoning?

  v. How do enzymes catalyze a reaction? OR What is the mechanism of enzyme catalysis?

 vi. What is optimum pH of enzyme?

SECTION-II

NOTE: Attempt All Questions: **(08)**

Q.3: How light and surface area affect the rate of chemical reaction.

Q.4: Explain the effect of temperature on the rate of reaction by Arhenius equation.