TEST – 6
CHAPTER NO. 7 , 11

Chemistry (New Scheme)	Inter Part I	Group- I / II
Time : 20 Min.	Objective Type	Marks:17

Note:- You have four choices for each objective type question as A,B,C and D. The choice which you think Is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero in that question.

1.1 For reaction $NaOH+HCl \longrightarrow NaCl+H_2O$, the change in enthalpy is.
(A) Heat of formation of water (B) Heat of formation of NaCl
(C) Heat of neutralization (D) Heat of reaction

2. The order of reaction for reaction $NO + O_3 \longrightarrow NO_2 + O_2$
(A) Two (B) Three (C) One (D) Zero

3. If an endothermic reaction is allowed to take place very rapidly in the air, the temperature of the surrounding air.
(A) Remain constant (B) Increase (C) Decrease (D) Remain unchanged

4. In zero order reaction, the rate is independent of.
(A) Temperature of reaction (B) Concentration of reactants
(C) Concentration of products (D) Concentration of reactants and products.

5. Calorie is equivalent to.
(A) 4.184 J (B) 418.4 J (C) 0.418 J (D) 41.84 J

6. The unit of rate content is the same as that of the rate of reaction in.
(A) Zero order reaction (B) 1^{st} order reaction (C) 2^{nd} order reaction (D) 3^{rd} order reaction

7. The change in the heat energy of a chemical reaction at constant temperature and pressure is called.
(A) Enthalpy change (B) Heat of sublimation (C) Bond energy (D) Internet energy change

8. If the rate equation of reaction $2A+ B \longrightarrow$ product having rate = $K[A]^2 [B]$ and A is present is large excess, then the order of reaction.
(A)1 (B) 2 (C) 3 (D) 4

9. The net heat change in a chemical reaction is same, whether it is brought about in one or several steps. It is known as.
(A) Henry's Law (B) Boyle's law (C) Hesse's law (D) Charle's law

10. A substance which makes the catalyst more effective is called.
(A) Promotor (B) Inhibitor (C) Retarder (D) Poison

11. The pressure of oxygen inside the bomb calorimeter is.
(A) 100 atm (B) 5 atm (C) 25 atm (D) 20 atm

12. The rate of reaction.
(A) Increase as the reaction proceeds (B) Decreases as the reaction proceeds
(C) Remains the same as the reaction proceeds (D) May decease or increase as the reaction proceeds

13. The exothermic process is.
(A) Evaporation (B) Sublimation (C) Respiration (D) Boiling

14. The enzyme used for hydrolysis of uria is.
(A) Invertase (B) Urease (C) Lipase (D) Zymase

15. Which of the following is not a state function.
(A) Pressure (B) Volume (C) Temperature (D) Heat

16. Enzyme used in hydrolysis of Glucose is.
(A) Urease (B) Invertase (C) Maltase (D) Zymase

17. Burning of coal is the example of.
(A) Non-spontaneous reaction (B) Reversible reaction
(C) Spontaneous reaction (D) Irreversible reaction

TEST – 6
CHAPTER NO. 7 , 11

Chemistry (New Scheme)	Inter Part I	Group- I / II
Time : 2:40 hours.	Subjective Type	Marks:68

SECTION - I

2. Write short answers to any EIGHT (8) questions. (8x2=16)

i. Differentiate between spontaneous and non-spontaneous reaction?
ii. Define negative catalyst along with an example?
iii. Burning of an candle is a spontaneous process. Justify.
iv. define instantaneous and average rate of reaction?
v. Describe system and surrounding?
vi. How does surface area effect the rate of reaction?
vii. Differentiate between internal energy and enthalpy?
viii. Discuss effect of nature of reactants on rate of reactions?
ix. Define standard enthalpy of atomization with an example.
x. What is specific rate constant or velocity constant?
xi. Enthalpy of neutralization is for an acid and base. Explain with example.
xii. The radioactive decay is always first order reaction. Explain?

3. Write Short answers to any EIGHT (8) questions. (8 x 2 =16)

i. Define enthalpy of combustion and enthalpy of solution?
ii. Define half life period. How is it used to determine the order of reaction?
iii. Why is it necessary to mention the physical state of reactants and products in a thermochemical reactions?
iv. Define and give an example of the process of activation of a catalyst?
v. Draw labelled diagram of bomb calorimeter?
vi Discuss auto catalyst with example?
vii. State the Hess's law of constant heat summation?
viii. Define catalytic poisoning with example.
ix. Is it true that a non-spontaneous process never happens in universe? Explain.
x. Differentiate between homogeneous and heterogeneous catalysis?
xi. Why in exothermic reaction, heat is released from the system?
xii. A finely divided catalyst may prove more effective why?

4. Write Short answers to any SIX (6) questions. (6 x 2 = 12)

i. Differentiate between exothermic reaction and endothermic reaction?
ii. A particular catalyst is suitable for a particular chemical reaction. Justify it?
iii. Define State function?
iv. How the enzymes act as catalysts?
v. Define enthalpy of combustion and enthalpy of solution?
vi. The unit of rate constant of second order reaction in $dm3mol^{-1}s^{-1}$ but the unit of rate of reaction is $mol^{-1}s^{-1}$. Give reasons?
vii. Prove $\Delta E = q_v$?
viii. Differentiate between fast step and rate determining step with example?
ix. How enthalpy of formation of CO is determined from graphite?

SECTION – II

Note: Attempt any THREE (3) questions: **(3 x 8 = 24)**

5. (a) State and explain with an example, the Hess's law of constant heat summation?

(b) How does Arrhenius equation help us to calculate the energy of activation of a reaction?

6. (a) What is Enthalpy of a reaction? How is ΔH of a reaction measured in laboratory by glass calorimeter?

(b) What is Catalysis? Differentiate between Homogeneous and Heterogeneous catalysis with one example in each?

7. (a) Define Enthalpy of reaction. How is it measure by glass calorimeter?

(b) Define half-life period and order of reaction. Describe half-life method to determine the order or reaction.

8. (a) Prove that i) $\Delta H = q_p$ ii) $\Delta E = q_v$

(b) Write down any four characteristics of a catalyst.

9. (a) What is first law of thermodynamics? Prove that $\Delta H = q_p$

(b) Give four characteristics of enzyme catalysis?