

SECOND TERM EVALUATION 2024-25

CHEMISTRY MODEL QUESTION PAPER

Standard: IX

Time: 1 ½ Hour

Total Score: 40

Instructions:

1. The first 15 minutes are for reading the questions carefully.
 2. Write answers according to the given instructions.
 3. Ensure answers reflect the allocated marks and time.
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Section A: Answer any 4 questions.

(4 × 1 = 4 Marks)

Each question carries 1 mark.

1. What is meant by the rate of a chemical reaction?
 2. Define a catalyst and give one example.
 3. What is a decomposition reaction? Write a general example.
 4. Write the chemical formula of magnesium nitride.
 5. Why does the reaction rate increase with an increase in temperature?
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Section B: Answer any 4 questions.

(4 × 2 = 8 Marks)

Each question carries 2 marks.

6. How does the surface area of a solid reactant affect the rate of a reaction? Illustrate with an example.
 7. Write the balanced chemical equation for the decomposition of hydrogen peroxide. What is the role of manganese dioxide in this reaction?
 8. Differentiate between homogeneous and heterogeneous catalysts with examples.
 9. Explain the importance of collision theory in chemical reactions.
 10. Write the chemical reaction for the thermal decomposition of calcium carbonate. What are the products obtained?
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Section C: Answer any 4 questions.

(4 × 3 = 12 Marks)

Each question carries 3 marks.

11. Describe the Haber process for the manufacture of ammonia, mentioning the catalyst and reaction conditions.

12. Explain how the concentration of reactants affects the rate of a chemical reaction with an experimental example.
 13. Define a displacement reaction and give a real-life application.
 14. Write the reaction for the decomposition of ammonium dichromate. Mention the products and the type of reaction.
 15. How can you increase the rate of reaction between zinc and dilute hydrochloric acid? Suggest two methods with reasons.
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Section D: Answer any 4 questions.

(4 × 4 = 16 Marks)

Each question carries 4 marks.

16. Draw and explain the energy profile diagram for an exothermic reaction, labeling activation energy and enthalpy change.
17. Describe the factors affecting the rate of a chemical reaction with examples.
18. Classify the following reactions into combination, decomposition, displacement, or double decomposition reactions:
 - a. $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
 - b. $2H_2O_2 \rightarrow 2H_2O + O_2$
 - c. $NaOH + HCl \rightarrow NaCl + H_2O$
 - d. $2Mg + O_2 \rightarrow 2MgO$.
19. State and explain the role of a catalyst in the industrial production of sulphuric acid (Contact process).
20. Experimentally demonstrate the effect of temperature on the rate of reaction using sodium thiosulphate and hydrochloric acid.