

Chemistry Model Paper
Paper-I (First Year)

Time: 3 Hrs.

Max. Marks: 60

SECTION - A

NOTE: Answer all questions.

10 × 2 = 20

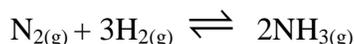
1. How many moles of glucose are present in 540 gms of glucose?
2. Calculate the kinetic energy of 5 moles of N₂ at 27°C.
3. What is a lewis acid? Give an example.
4. Describe the importance of plaster of paris.
5. Give the formula of borazine. What is its common name?
6. Both CCl₄ and SiCl₄ has stable octets of the central atoms, but SiCl₄ is acidic. Why?
7. Graphite is a good conductor. Explain.
8. Which oxides cause Acid rain? Give the pH of acid rain.
9. Give the chemical equations in-volved in the Ozone depletion by CF₂Cl₂.
10. Write the reagents required for the conversion of Benzene to Methyl Benzene.

SECTION - B

NOTE: Answer any Six of the following.

6 × 4 = 24

11. Write the postulates of kinetic theory of gases.
12. Balance the following equation by Ion electron method
$$Cr_2O_7^{2-} + NO_2^- \rightarrow Cr^{+3} + NO_3^-$$
 in acidic medium
13. Explain the spontaneity of a reaction in terms of Gibbs free energy.
14. Explain the following with suitable examples
 - i) electron-deficient
 - ii) electron-precise hydrides
15. Discuss the structure of Boric acid. Give its uses.
16. Derive the relationship between K_P and K_C for the equilibrium reaction.



17. Describe any two methods of preparations of ethane.
18. Discuss Markownikoff's rule with example.

SECTION - C

NOTE: Answer any two questions.

2 × 8 = 16

19. Write the main Postulates of quantum mechanical model of an atom.
20. Write the salient features of Molecular Orbital Theory. He₂ molecule does not exist. Why?
21. State Modern periodic law. Justify the classification of elements into s, p, d and f blocks.

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