123

II

Total No. of Questions – 21

Total No. of Printed Pages – 2

Regd. No.

Part - III
CHEMISTRY, Paper-I
(English Version)

Time : 3 Hours] **[Max. Marks : 60**

Note : Read the following instructions carefully :

(i) Answer **all** questions of Section – **'A'**. Answer any **six** questions in Section – **'B'** and any **two** questions in Section – **'C'**.

(ii) In Section – **'A'**, questions from Sr. Nos. **1** to **10** are of "Very short answer type". Each question carries **two** marks. Every answer may be limited to **two** or **three** sentences. Answer all these questions at one place in the same order.

(iii) In Section – **'B'**, questions from Sr. Nos. **11** to **18** are of "Short answer type". Each question carries **four** marks. Every answer may be limited to **75** words.

(iv) In Section – **'C'**, questions from Sr. Nos. **19** to **21** are of "Long answer type". Each question carries **eight** marks. Every answer may be limited to **300** words.

(v) Draw labelled diagram, wherever necessary for questions in Section – **'B'** and **'C'**.

SECTION – A

$10 \times 2 = 20$

Note : Answer **all** questions :

1. What is B.O.D. ?
2. Write any one strategic adopted in green chemistry to avoid environmental pollution.
3. What happens when Mg burns in air ? Give equations also.
4. What is Plaster of Paris ? Give two uses.
5. Among N_2, O_2, CH_4, which gas diffuses fast, why ?
6. How many moles of glucose are present in 540 gms of glucose ?
7. What are Extensive and Intensive Properties ?
8. Define Third Law of Thermodynamics.
9. What is pH ? Calculate the pH of 0.001 M HC*l* solution.

10. Write the structures of the following compounds :
    (a) 3, 3, 4, 5 – tetramethyl Heptane
    (b) 2-methyl pent-1-ene

SECTION – B

6 × 4 = 24

Note : Answer any **six** questions.

11. Deduce : (a) Boyle's law and (b) Charles's law from kinetic gas equation.

12. A carbon compound on analysis gave the following percentage composition. Carbon – 14.5%, Hydrogen – 1.8%, Chlorine – 64.46% and oxygen – 19.24%. Calculate the empirical formula of the compound.

13. What is salt hydrolysis ? Write the nature of the following salt solutions :
    (a) CH_3COONa
    (b) NH_4Cl
    (c) $NaCl$

14. Explain any four reducing properties of H_2O_2 with equations.

15. Explain any two methods for the preparation of Diborane.

16. What is Hybridization ? Explain Hybridization involved in PCl_5 molecule.

17. Define Dipole Moment. Why the Dipole Moment of BeF_2 is zero ?

18. Write the properties of Diamond and Graphite on the basis of their hybridization.

SECTION – C

2 × 8 = 16

Note : Answer any **two** questions :

19. Explain four quantum numbers and write their significance.

20. What is periodic property ? How the following properties vary in a group and in a period ? Explain.
    (a) I.E. (b) Metallic property (c) Atomic radius

21. Explain any two preparation methods and two chemical properties of ethane.
