223

II

Total No. of Questions – 21 **Regd. No.**

Total No. of Printed Pages – 2

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

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

Note : Read the following instructions carefully :

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

(2) 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.

(3) 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.

(4) 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.

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

SECTION – A

10 × 2 = 20

Note : Answer all the questions.

1. What is PHBV ? How is it useful to man ?
2. Write the names of monomers of the following polymers :
   (a) Bakelite
   (b) Terylene
3. Define osmotic pressure.
4. State Faraday's first law of electrolysis.
5. What is poling ?
6. A mixture of Ca_3P_2 and CaC_2 is used in making Holmes signal. Explain.
7. In modern diving apparatus, a mixture of He and O_2 is used. Why ?
8. Calculate the magnetic moment of a divalent ion in aqueous solution if its atomic number is 25.

9. What are artificial sweetening agents ? Give example.

10. What are antibiotics ? Give example.

SECTION – B

$6 \times 4 = 24$

Note : Answer any six questions.

11. Derive Bragg's equation.

12. State Raoult's Law.

The vapour pressure of pure benzene at a certain temperature is 0.850 bar. A non-volatile, non-electrolyte solid weighing 0.5 g when added to 39.0 g of benzene (molar mass 78 g mol^{-1}). Vapour pressure of the solution, then is 0.845 bar. What is the molar mass of the solid substance ?

13. What is catalysis ? How is catalysis classified ? Give two examples for each type of catalysis.

14. Differentiate Roasting and Calcination with examples.

15. (a) What is Misch metal ? Give its composition and uses.
    (b) What is an Ambidentate Ligand ? Give example.

16. Give the sources of the following Vitamins and name the diseases caused by their deficiency :
    (a) A (b) D (c) E (d) K

17. Explain the terms :
    (a) Enantiomers (b) Racemisation

18. Explain the following reactions :
    (a) Carbylamine reaction (b) Sandmeyer reaction

SECTION – C

$2 \times 8 = 16$

Note : Answer any **two** of the following questions :

19. Give a detailed account of the collision theory of reaction rates of Bimolecular gaseous reactions.

20. (a) How is chlorine prepared by electrolytic method ? Explain its reaction with
        (i) Cold and dil. NaOH (ii) Slaked lime
    (b) How does ozone react with following ?
        (i) PbS (ii) Moist KI (iii) Hg (iv) C_2H_4

21. (a) Explain the following reactions :
        (i) Reimer-Tiemann reaction (ii) Williamson synthesis
    (b) Describe the following :
        (i) Cannizaro reaction (ii) Decarboxylation
