

223

II

Total No. of Questions – 21

Regd.

Total No. of Printed Pages – 2

No.

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**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  $\text{Ca}_3\text{P}_2$  and  $\text{CaC}_2$  is used in making Holmes signal. Explain.
7. In modern diving apparatus, a mixture of He and  $\text{O}_2$  is used. Why ?
8. Calculate the magnetic moment of a divalent ion in aqueous solution if its atomic number is 25.

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P.T.O.

9. What are artificial sweetening agents ? Give example.  
 10. What are antibiotics ? Give example.

## SECTION – B

6 × 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<sup>-1</sup>). 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 × 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<sub>2</sub>H<sub>4</sub>  
 21. (a) Explain the following reactions :  
 (i) Reimer-Tiemann reaction (ii) Williamson synthesis  
 (b) Describe the following :  
 (i) Cannizaro reaction (ii) Decarboxylation