223

Total No. of Questions – 21

Total No. of Printed Pages – 2

Regd. No.

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 diagrams, wherever necessary for questions in Section – 'B' and 'C'.

SECTION – A

$10 \times 2 = 20$

Note : Answer **all** the questions :

1. Define Osmotic Pressure.

2. What are antibiotics ? Give example.

3. Write the difference between a soap and a synthetic detergent.

4. State Faraday's first law of electrolysis.

5. Give the composition of the following alloys :

   (a) Brass   (b) German Silver

6. List out any two uses of Neon.

7. Write the structure of XeF_4.

8. Why Zn^{2+} is diamagnetic whereas Cr^{3+} is paramagnetic ?

9. What is biodegradable polymer ? Give one example.

10. Write the names of the monomers of the following polymers :

    (a) Bakelite   (b) Nylon - 6,6

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SECTION – B

6 × 4 = 24

Note : Answer any **six** questions :

11. What is doping ? Explain n-type and p-type semi-conductors.

12. Explain the purification of Sulphide ore by froth floatation method.

13. 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 ?

14. Describe the purification of colloidal solutions by Dialysis method with a neat diagram.

15. Write the equations for reactions of chlorine with the following

    (a) Cold and dilute NaOH   (b) Excess NH_3

    (c) $Ca(OH)_2$ (d) $Na_2S_2O_3$

16. Explain Werner's theory of Co-ordination compounds.

17. What are Hormones ? Give one example for each of the following :

    (a) Steroid hormones

    (b) Polypeptide hormones

    (c) Amino acid derivatives

18. Explain the mechanism of S_N2 reaction with one example.

SECTION – C

2 × 8 = 16

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

19. (a) What are Galvanic cells ? Explain the working of Galvanic cells with one example.

    (b) Write the differences between order and molecularity of a reaction.

20. (a) How is ammonia manufactured by Haber's process ? Explain.

    (b) How does ozone react with the following :

        (i) PbS   (ii) KI   (iii) C_2H_4 (iv) NO

21. Explain the following reactions with suitable example :

    (a) Reimer-Tiemann reaction

    (b) Cannizaro reaction

    (c) Aldol condensation

    (d) Sandmeyer reaction