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 from Section – 'B' and any **two** questions from 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 Section – 'C'.

SECTION – A $10 \times 2 = 20$

Note : Answer **all** questions :

1. What is an Ideal Solution ?

2. Write the Arrhenius equation for the rate constant (K) of a reaction.

3. Give the composition of the following alloys :

   (a) Brass   (b) Bronze

4. How is $XeOF_4$ prepared ? Give its structure.

5. Write the reactions of F_2 and Cl_2 with water.

6. Scandium is a transition element. But Zinc is not. Why ?

7. What is PDI (Poly Dispersity Index) ?

8. What is allosteric site ?

9. What are antacids ? Give example.

10. Write the names and structures of the monomers used for getting the following :
    (a) Poly Vinyl Chloride
    (b) Teflon

SECTION – B

$6 \times 4 = 24$

Note : Answer any **six** questions :

11. Derive Bragg's equation.

12. Define Mole fraction. Calculate the Mole fraction of ethylene glycol $(C_2H_6O_2)$ in a solution containing 20% of $C_2H_6O_2$ by mass.

13. What is an Emulsion ? How emulsions are classified. Give one example for each type of emulsion.

14. Explain the following :
    (a) Zone refining
    (b) Poling

15. How is ammonia manufactured by Haber's process ?

16. Explain geometrical isomerism in co-ordination compounds giving suitable examples.

17. Give the sources of the following vitamins and name the disease caused by their deficiency.
    (a) A   (b) D   (c) E   (d) K

18. Explain the Grignard reagents preparation and application with suitable example.

SECTION – C

$2 \times 8 = 16$

Note : Answer any **two** questions :

19. (a) State and explain Kohlrausch's law of independent migration of ions.
    (b) What is "molecularity" of a reaction ? How is it different from the "order" of a reaction ? Name one bimolecular and one trimolecular gaseous reactions.

20. How is ozone prepared from oxygen ? Explain its reaction with
    (a) C_2H_4 (b) KI   (c) Hg   (d) PbS

21. (a) Describe the following :
    (i) Cannizaro reaction
    (ii) Decarboxylation
    (b) How do you prepare Ethyl cyanide and Ethyl isocyanide from a common alkyl halide ?