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.*

(i) *Answer all the 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 2 or 3 sentences. Answer all these questions at one place in 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 diagrams wherever necessary for questions in Section-B and Section-C.*

SECTION - A

Note : Answer *all* the questions.   10x2=20

1. What are isotonic solutions ?

2. What is a primary battery ? Give one example.

3. State the role of silica in the metallurgy of copper.

4. How is chlorine manufactured by Deacon's method ?

5. What happens when Cl_2 reacts with dry slaked lime ?

6. Calculate the spin only magnetic moment of Fe^{2+} aq ion.

7. What is vulcanization of rubber ?

8. What is Ziegler-Natta catalyst ?

9. What are antacids ? Give example.

10. What is the difference between a soap and a synthetic detergent ?

SECTION - B

Note : Answer *any six* questions.   6x4=24

11. Derive Bragg's equation.

12. What is relative lowering of vapour pressure ? How is it useful to determine the molar mass of a solute ?

13. Compare and contrast the phenomenon of physisorption and chemisorption.

14. Explain Zone refining.

15. Explain Werners theory of coordination compounds with suitable examples.

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. Mention the structures of (a) XeF_2 and (b) XeF_4

18. Which compound in each of the following pairs will react faster in S_N2 reaction with –OH ? Reason.
    (i) CH_3Br or CH_3I (ii) $(CH_3)_3CCl$ or CH_3Cl

SECTION - C

Note : Answer *any two* questions.   2x8=16

19. (a) Describe the salient features of the collision theory of reaction rates of bimolecular reactions.
    (b) State and explain Kohlrausch's law of independent migration of ions.

20. (a) Write the chemical reactions that occur in the manufacture of nitric acid. (Ostwald's Method)
    (b) How is ozone prepared from oxygen ? Explain its reaction with :
        (i) C_2H_4 (ii) KI

21. Describe the following reactions.
    (a) Carbylamine reaction
    (b) Gattermann reaction
    (c) HVZ reaction
    (d) Aldol condensation

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