223

I

Total No. of Questions - **21**

Total No. of Printed Pages - **3**

Regd. No. | 1 | 1 | 1 | 8 | 2 | 3 | 3 | 7 | 4 | 7 |

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 **2** or **3** 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

Note : Answer **all** the questions. **10 × 2 = 20**

1. Calculate the number of particles present in a fcc crystal structure.

2. What are octahedral holes? How are they formed?

3. Write the systematic names of the following :
   a) $K[Ag(CN)_2]$
   b) $[Co(NH_3)_3\,(Cl_3)]$

4. What is PHBV? How is it useful to man?

5. What are lipids? Give one example.

6. What are vitamins? Give one example.

7. Define antiseptics. Give examples.

8. How is paracetamol prepared? Give its equation.

9. What is chloropicrin? How is it formed from chloroform? Give its equation.

10. Complete the following reactions :

a) $C_2H_5Cl \xrightarrow{NaOC_2H_5} .....$

b) $C_2H_5Cl \xrightarrow{Na, \text{ dry ether}} .....$

SECTION B

Note : Answer **any six** questions. **6 x 4 = 24**

11. Define molarity. Calculate the molarity of 10.6% $\left(\frac{W}{V}\right)$ Na_2CO_3 solution.

12. State and explain Faraday's laws of electrolysis.

13. Explain the Lewis acid-base theory with suitable examples.

14. Write any four differences between physical adsorption and chemical adsorption.

15. State Hess's law of constant heat summation and explain it with an example.

16. Draw a neat diagram of a blast furnace and label it neatly.

17. Explain how superphosphate of lime is manufactured.

18. Write the important postulates of Werner's theory of complex compounds.

SECTION C

Note : Answer **any two** questions. $2 \times 8 = 16$

19. State LeChatelier's principle, apply the same to the equilibrium.
$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$; $\Delta H = -92$ kJ.

20. a) How is bleaching powder prepared industrially?

b) Give the reactions of ozone with the following and give equations.

i) Hg ii) SO_2

iii) H_2O_2 iv) PbS

21. Write any two methods of the preparation of aniline.

What happens when aniline is treated with the following? Give equations.

i) HCl ii) CH_3COCl

iii) $CHCl_3 + Alc.KOH$ iv) $NaNO_2 + HCl$