

Total No. of Questions - 21
Total No. of Printed Pages - 3

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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 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.

 $10 \times 2 = 20$ 

- Z. Calculate the number of particles present in a fcc crystal structure.
- What are octahedral holes? How are they formed?
- 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?

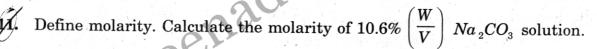
- 5. What are lipids? Give one example.
- 6. What are vitamins? Give one example.
- 7. Define antiseptics. Give examples.
- How is paracetamol prepared? Give its equation.
- What is chloropicrin? How is it formed from chloroform? Give its equation.
- 10 Complete the following reactions:
  - a)  $C_2H_5Cl$   $NaOC_2H_5$  .....
  - b)  $C_2H_5Cl$ —Na, dry ether  $\longrightarrow$ .....

## SECTION B

Note: Answer any six questions.

 $6 \times 4 = 24$ 

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- State and explain Faraday's laws of electrolysis.
- Explain the Lewis acid-base theory with suitable examples.
- Write any four differences between physical adsorption and chemical adsorption.
- 5. 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.
- Explain how superphosphate of lime is manufactured.
- Write the important postulates of Werner's theory of complex compounds.

## **SECTION C**

Note: Answer any two questions.

 $2 \times 8 = 16$ 

- 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

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<sub>3</sub>COCl
- iii)  $CHCl_3 + Alc.KOH$
- iv)  $NaNO_2 + HCl$