



Total No. of Questions - 21

Regd.

Total No. of Printed Pages - 3

No.

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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 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

Note : Answer all questions :

 $10 \times 2 = 20$

1. What is Schottky defect ?
2. What are Isotonic solutions ? Give an example.
3. Write the integrated equation for a first order reaction in terms of $[R]$, $[R]_0$ and 't'.
4. Give examples of colloidal system of :
 - (a) Liquid in solid
 - (b) Gas in solid

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5. Nitrogen molecule is highly stable – Why ?
6. Write any two uses of argon.
7. What is Ligand ? Give an example.
8. What are reducing sugars ?
9. Explain Fittig reaction with an example.
10. What is carbylamine reaction ?

SECTION - B

Note : Answer any six questions :

6 × 4 = 24

11. Derive Bragg's equation.
12. Vapour pressure of water at 293 K is 17.535 mm Hg. Calculate the vapour pressure of the solution at 293 K when 25 g of glucose is dissolved in 450 g of water.
13. Define order of reaction and molecularity of reaction. Write the differences between them.
14. What is adsorption ? Give any three differences between physical adsorption and chemical adsorption.
15. How does ozone react with the following :
 - (a) PbS
 - (b) KI
 - (c) C₂H₄
 - (d) Hg
16. Explain Werner's theory of coordination compounds with suitable examples.
17. Write a brief note on the structure of glucose.
18. Explain the mechanism of Nucleophilic bimolecular substitution (S_N2) reaction with one example.

SECTION - C

Note : Answer any two questions :

2 × 8 = 16

19. (a) Explain the working of a galvanic cell with a neat sketch taking Daniel cell as example.
- (b) State and explain Kohlrausch's Law of independent migration of ions.
20. How is chlorine prepared in laboratory ? How does it react with the following :
- (a) Cold, Dil. NaOH
- (b) Hot, Conc. NaOH
- (c) NH_3 (excess)
- (d) NH_3 with excess Cl_2
21. Describe the following :
- (a) Reimer - Tiemann reaction
- (b) Williamson's Ether synthesis
- (c) Cross aldol condensation reaction
- (d) Decarboxylation reaction
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