

(New Syllabus)

Total No. of Questions - 21

Total No. of Printed Pages - 4

Regd.
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 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'.

Answer **all** questions.

10 × 2 = 20

1. State Raoult's law.
2. Give two examples of gaseous first-order reactions.
3. Give the composition of the following :
 - a) German silver
 - b) Brass
4. Ammonia is a good complexing agent. Explain with an example.
5. Write the reactions of F_2 and Cl_2 with water.
6. $CuSO_4 \cdot 5H_2O$ is blue in colour whereas anhydrous $CuSO_4$ is colourless. Why?
7. What is the difference between a soap and a synthetic detergent?
8. What are antacids? Give an example.
9. Compare the acidic strength of acetic acid, chloroacetic acid, benzoic acid and phenol.
10. How do you carry out the following conversion?
Aniline to *p*-Bromoaniline

Answer any six questions.

6 × 4 = 24

11. Derive Bragg's equation.
12. Define mole fraction. A solution of sucrose in water is labelled as 20% w/w. What would be the mole fraction of each component in the solution?
13. What is catalysis? How is catalysis classified? Give two examples for each type of catalysis.
14. Explain the following :
 - a) Roasting
 - b) Calcination
15. Explain Werner's theory of coordinate compounds with suitable examples.
16. a) What is polymerization? Give an example of a polymerization reaction.
b) Write the names and structures of monomers used for getting the following polymers.
 - i) Teflon
 - ii) Bakelite
17. What are hormones? Give an example for each of the following :
 - a) Steroid hormones
 - b) Polypeptide hormones
 - c) Amino acid derivatives
18. Explain S_N1 and S_N2 reactions.

SECTION C

Answer any two questions.

2 × 8 = 16

19. a) How does ozone react with the following?
- C_2H_4
 - Moist I^-
 - Hg
 - Ag
- b) How are XeF_2 and XeF_4 prepared? Give their structures.
20. a) State Faraday's laws of electrolysis. A solution of $CuSO_4$ is electrolyzed for 10 minutes with a current of 1.5 amperes. What is the mass of copper deposited at the cathode?
- b) What is molecularity of a reaction? How is it different from the order of a reaction? Name one bimolecular and one trimolecular gaseous reaction.
21. a) Write any two methods of preparation of phenol. Give their corresponding equations.
- b) Explain the following reactions :
- Diazotization
 - Carbylamine reaction