

Part – III
CHEMISTRY
Paper – II
(English Version)

Question Booklet Sl. No.



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** questions.

1. What is cryoscopic constant ?
2. What are pseudo first order reactions? Give one example.
3. What is the role of cryolite in the metallurgy of aluminium ?
4. What happens when white phosphorus is heated with concentrated NaOH solution in an inert atmosphere of CO_2 ?
5. SO_2 can be used as an antichlor. Explain.
6. Why Zn^{2+} is diamagnetic where as Mn^{2+} is paramagnetic ?
7. What is Ziegler-Natta catalyst ?

(10×2=20)



8. What is PHBV? How is it useful to man?
9. What are artificial sweetening agents? Give example.
10. What is the difference between a soap and a synthetic detergent?

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. What is catalysis? How is catalysis classified? Give two examples for each type of catalysis.
14. Explain the purification of sulphide ore by froth flotation method.
15. Explain the structures of (a) XeF_6 and (b) XeOF_4 .
16. Explain Werner's theory of co-ordination compounds with suitable examples.
17. What are hormones? Give one example for each.
- (a) Steroid hormones <https://www.apboardonline.com>
- (b) Polypeptide hormones
- (c) Amino acid derivatives.
18. (a) What are ambident nucleophiles?
- (b) What are enantiomers?

SECTION - C

Note : Answer ANY TWO questions.

(2×8=16)

19. (a) State and explain Kohlrausch's law of independent migration of ions.
- (b) What is molecularity of a reaction? How is it different from the order of a reaction? Name one bimolecular and one trimolecular gaseous reactions.
20. (a) How does ozone react with the following :
- (i) PbS (ii) KI (iii) Hg (iv) Ag
- (b) Write balanced equations for the following :
- (a) NaCl is heated with concentrated H_2SO_4 in the presence of MnO_2 .
- (b) Chlorine is passed into a solution of NaI in water.
21. Describe the following :
- (a) Kolbe reaction
- (b) Aldol condensation
- (c) Carbyl amine reaction
- (d) Williamson synthesis.