

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****Notes :** Read the following instructions carefully.

- (i) Answer **all** questions of Section – A. Answer any **six** questions of Section – B and any **two** questions of 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 **5** lines. Answer all these questions at one place in the 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 **10** lines.
- (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 **40** lines.
- (v) Draw labelled diagrams, wherever necessary for questions in Section – B and C.

SECTION – A

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

1. Define order of reaction.
2. Give the composition of Brass.
3. What is the pH of a solution, containing 0.63 gm of HNO_3 in 100 ml of solution ?
4. What is PHBV ? How is it useful to man ?

5. Give the deficiency diseases caused by A , D, E, K Vitamins.
6. Give two biological functions of lipids.
7. What are antibiotics ? Give two examples.
8. What are Food preservatives ? Give example.
9. What is Williamson's Synthesis ? Give equation.
10. Write Hell Volhard Zelinsky (HVZ) reaction with equation.

SECTION – B

Note : Answer any **six** questions.

6 × 4 = 24

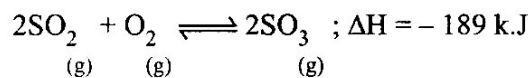
11. Define Molality. How many grams of Na_2CO_3 should be dissolved in 250 grams of water to prepare 0.1 m solution ?
12. What is Doping ? What are n – type and p – type semiconductors ?
13. Give Nernst equation.
Calculate the electrode potential of the following single electrode.
 $\text{Cu}^{++}_{(\text{aq})}$ (C = 0.01M) / Cu ; ($E^\circ = + 0.337\text{V}$)
14. What is emulsion ? How are emulsions classified ? Give examples.
15. State Hess's law of constant heat summation and explain it with an example.
16. Write short notes on the following :
 - (a) Roasting
 - (b) Calcination
17. Write balanced equations for the formation of NCl_3 and PCl_3 . Give equations for hydrolysis reactions of NCl_3 and PCl_3 .
18. Draw Werner's structures of the following :
 - (a) $\text{CoCl}_3 \cdot 6\text{NH}_3$
 - (b) $\text{CoCl}_3 \cdot 5\text{NH}_3$
 - (c) $\text{CoCl}_3 \cdot 4\text{NH}_3$
 - (d) $\text{CoCl}_3 \cdot 3\text{NH}_3$

SECTION – C

Note : Answer any **two** questions.

2 × 8 = 16

19. State Le Chatelier's principle and apply it to the following equilibrium.



20. (a) Explain the industrial method of preparation of bleaching powder with a neat diagram.
- (b) Give the reactions of ozone with the following and give equations.
- (i) PbS
 - (ii) $\text{SnCl}_2 / \text{HCl}$
 - (iii) Moist KI
 - (iv) BaO_2
21. (a) Explain the preparation of ethyl alcohol from Molasses.
- (b) How does ethyl alcohol react with the following ? Write equations.
- (i) Metallic Na
 - (ii) CH_3COOH
 - (iii) CH_3MgI
 - (iv) Conc. H_2SO_4 at 170°C
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