

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

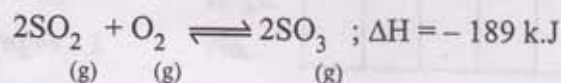
11. Define Molality. How many grams of Na_2CO_3 should be dissolved in 250 grams of water to prepare 0.1 m solution?
12. What is Doping? What are n-type and p-type semiconductors?
13. Give Nernst equation.
Calculate the electrode potential of the following single electrode.
 $\text{Cu}_{(\text{aq})}^{++} (C = 0.01\text{M}) / \text{Cu} ; (E^\circ = +0.337\text{V})$
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.

223 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

SECTION - A