

22242

21819

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.

Marks

1. Attempt any FIVE of the following :

10

- (a) Define pH. Write the pH value of extremely acidic and alkaline solution.
- (b) Define Arrhenius acid and base.
- (c) Write properties of colloidal solution.
- (d) Explain the term order of chemical reaction.
- (e) State second law of thermodynamics.
- (f) Define Oxidation and Reduction with respect to hydrogen.
- (g) Write limitations of distribution law.

2. Attempt any THREE of the following :

12

- (a) Explain Lewis concept of acids and bases.
- (b) Calculate the weight of NaOH required for the preparation of 0.01 N 1000 ml solution [Molecular weight of sodium hydroxide is 40 g]
- (c) Explain the term Endothermic and Exothermic reactions with example.
- (d) Explain the role of oxidizing and reducing agent in dyeing.

- 3. Attempt any THREE of the following : 12**
- (a) Classify the given salts based on their composition. Write examples of each.
 - (b) 7 g of NaOH is dissolved to give a volume of 700 ml of the solution. Calculate the molarity of the solution. [Molecular weight of sodium hydroxide = 40 g]
 - (c) Explain the factors affecting the rate of chemical reactions.
 - (d) Describe the properties of oxidizing agent.
- 4. Attempt any THREE of the following : 12**
- (a) Describe the procedure to measure the concentration H^+ ions present in the given colourless textile auxiliary.
 - (b) Explain the terms heat of formation and heat of combustion with suitable example.
 - (c) State and explain first law of thermodynamics.
 - (d) State Distribution Law and explain it.
 - (e) A solid X is added to a mixture of benzene and water. After shaking well and allowing it to stand, 10 ml of benzene layer was found to contain 1.13 g of X and 100 ml of water layer contained 0.22 g of X. Calculate the value of distribution coefficient.
- 5. Attempt any TWO of the following : 12**
- (a) Explain role of alkali liberating agent in reactive dyeing of cotton.
 - (b) Write classification of colloidal systems with examples.
 - (c) Explain the role of temperature in dyeing polyester fibre.
- 6. Attempt any TWO of the following : 12**
- (a) Explain the role of oxidizing and reducing agent in bleaching with NaOCl and printing with vat dyes.
 - (b) Caustic is used for both scouring and mercerization of cotton. Differentiate these process on the basis of temperature. Identify the change occurred after treatment.
 - (b) Describe the procedure of the separation of the given type of immiscible liquid.
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