17222

21819

3 Hours / 100 Marks   Seat No.

Instructions – (1) All Questions are *Compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(2) Figures to the right indicate full marks.

(4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any <u>TEN</u> of the following:**   **20**

a) Define 'solution' with suitable example.

b) Define 'normality' and 'morality'.

c) Distinguish 'endothermic' and 'exothermic' reaction.

d) Define 'wetting agent' with example.

e) Define 'reduction' with suitable example.

f) What is vat dye? Give example.

g) Write the statement of second law of thermodynamics.

h) Write the meaning of thermochemistry.

i) State heat of neutralization with an example.

j) Explain principle of extraction process.

k) State two limitations of distribution law.

l) Define rate constant of chemical reaction. Give an example.

m) Distinguish between hydrophilic and hydrophobic sols.

n) Define salt with suitable example.

Marks

2. **Attempt any FOUR of the following:** **16**

a) Explain Lewi's concept of acid and base with suitable examples.

b) Describe the concept of saturated solution.

c) State the various factors affecting rate of chemical reaction and explain any one of them.

d) Define the following terms:

    (i)   Cohesive force.

    (ii) Interfacial tension.

    (iii) Dispersing agent and

    (iv) Surface tension.

e) Explain the application of potassium dichromate in textile wet processing.

f) State and explain the first law of thermodynamic and write its mathematical expression.

3. **Attempt any FOUR of the following:** **16**

a) Explain any four importance of pH in textile wet processing.

b) Define viscosity and state the factors affecting viscosity. Explain any one factor.

c) Distinguish between reversible and irreversible reaction.

d) Define surfactants. Explain the role of surfactants in the wet processing of textiles.

e) Explain the application of $Na_2S_2O_4$ in sulphur dyeing and peroxide dyeing.

f) Define the following:

    (i)   Heat of formation.

    (ii) Heat of combustion.

    (iii) Heat of solution.

    (iv) Heat of reaction.

Marks

4. **Attempt any FOUR of the following:** **16**

a) Explain the role of acid and alkali liberating agent in wet processing of textiles.

b) Explain the process of reverse osmosis. Why is it called so?

c) Define the following:

    (i) Law of mass action.

    (ii) Equilibrium constant.

    (iii) First order reaction.

    (iv) Diazotization reaction.

d) Define emulsifying agent. Write its evidence in textile wet processing.

e) Explain the use of sodium-in nitrobenzene sulphonate as oxidizing agent for preventing hydrolysis of reactive dyes.

f) Write any four application of theory of extraction.

5. **Attempt any FOUR of the following:** **16**

a) Explain the role of acid and alkali liberating agent in wet processing.

b) Define osmosis. Describe its mechanism.

c) Distinguish between emulsifying agent and dispersing agent.

d) Explain the use of NaOCl in textile wet processing.

e) Explain reduction with an example and chemical reaction.

f) Define dissociation and association with suitable example of each.

Marks

6. **Attempt any <u>FOUR</u> of the following:** 16

   a) Explain Arrhenius concept of acid and base.

   b) Explain the concept of strength of acid and base with suitable example.

   c) Explain uses of salts in textile processing.

   d) Explain with suitable example of each:

   (i) Oil in water emulsion.

   (ii) Water in oil emulsion.

   e) Define colloids. Classify it giving example.

   f) Explain the following:

   (i) Cold brand at room temperature

   (ii) Hot brand at 80%

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