# 17222

**11920**

**3 Hours / 100 Marks** Seat No. | | | | | | | | |

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

(2) Answer each next main Question on a new page.

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

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

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

(8) Use of Steam tables, logarithmic, Mollier's chart is permitted.

**Marks**

**1. Answer any TEN of the following:** **20**

a) Define pH and pOH.

b) Define a salt.

c) State the role of alkali liberating agent in wet processing.

d) Define emulsion.

e) Define viscosity. Write its unit.

f) Define solution. Name types of solution.

g) State law of mass action.

**Marks**

h) Define:
   (i) Exothermic and
   (ii) Endothermic reaction

i) Define the term:
   (i) Surface tension
   (ii) Adhesive force

j) Define wetting agent. Give two examples.

k) Explain the term:
   (i) Oxidation
   (ii) Reduction

l) Write the applications of hydrogen peroxide.

m) Define the terms:
   (i) heat of solution
   (ii) heat of dilution

n) State law of distribution.

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

a) Describe Lewis concept of acid and base.

b) Explain the importance of pH in textile wet processing and dyeing.

c) Write classification of salts with the example of each.

d) Explain the concept of strength of acid and base.

e) Write uses of salts in textile wet processing.

f) Give the classification of acids bases depending on $H^+$ and $OH^-$ ions present in acids and bases with one example of each.

**Marks**

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

a) State the factor's affecting the viscosity. Explain any two of them.

b) Classify colloids, giving examples.

c) Explain the concept of standard solutions.

d) Explain:

(i) hydrophilic sols

(ii) hydrophobic sols.

e) Describe process of reverse osmosis.

f) Explain with examples, the role of emulsifying agents in textile wet processing.

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

a) Distinguish between reversible and irreversible reaction.

b) Explain any four factors affecting the rate of chemical reaction in textile wet processing.

c) Define order of reaction. Explain meaning of first order reaction.

d) Explain the meaning of kinetics and equilibrium of chemical reactions.

e) Describe the concept of interfacial tension.

f) Distinguish between emulsifying agent and dispersing agent.

**Marks**

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

a) Explain the evidence of dispersing agent and wetting agent in textile wet processing.

b) Explain with examples the role of oxidizing and reducing agents in textile wet processing.

c) Write the applications of $K_2Cr_2O_7$ and $Na_2S_2O_4$ in textile wet processing.

d) Explain reduction process with suitable chemical reaction.

e) Write the applications of NaOCl in vat and sulphur dyeing.

f) Explain the use of sodium m-nitrobenzene sulphonate as oxidising agent for preventing hydrolysis of reactive dyes.

**6. Answer any FOUR of the following:** **16**

a) Write the applications of heat of reaction in textiles.

b) State and explain first law of thermodynamics.

c) Explain the terms:

(i) Heat of formation

(ii) Heat of combustion

d) Distinguish between dissociation and association.

e) Describe theory of extraction.

f) Write the limitations of law of distribution.

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