



Name : .....  
Roll No. : .....  
Invigilator's Signature : .....

**CS/M.TECH(MCP)/SEM-1/MCP-101/2011-12**

**2011**

**THEORY AND PRACTICES OF COLOURATION**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**GROUP - A**  
**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :  $10 \times 1 = 10$ 
  - i)  $H_2O_2$  bleaching is carried out at pH and temperature as
    - a) 10.5 and room temperature
    - b) 10.5 and  $85^\circ C - 90^\circ C$
    - c) 7 and  $85^\circ C - 90^\circ C$
    - d) 12 and  $85^\circ C - 90^\circ C$ .
  - ii) Wool scouring is done at a temperature as
    - a) room temperature
    - b)  $50^\circ C$
    - c)  $80^\circ C$
    - d) high temperature.



- iii) Which of the following can act as stabilizer during peroxide bleaching ?
- a) Citric acid                      b) Glauber salt  
c) Sequestering agent          d) Iron salt.
- iv) Which of the following dyes has the highest tinctorial power ?
- a) Basic dyes                      b) Direct dyes  
c) Reactive dyes                d) Solubilised vat dyes.
- v) Diazotisation is done with
- a) sodium nitrate                b) sodium nitrite  
c) caustic soda                  d) sulphuric acid.
- vi) Basic dyes have light fastness
- a) poor on all fibres  
b) good on all fibres  
c) poor on wool and good on acrylic  
d) good on wool.
- vii) Light fastness is graded between
- a) 1 – 5                              b) 1 – 6  
c) 1 – 8                              d) 1 – 10.
- viii) Artificial source used for testing light fastness is
- a) tungsten lamp                b) fluorescent lamp  
c) xenon arc lamp                d) UV lamp.
- ix) Milting acid dyes are applied under
- a) neutral condition              b) strong acid  
c) weak acid                        d) alkaline condition.



- x) Soda ash is used in dyeing with direct dyes in order to
- maintain alkalinity
  - improve exhaustion
  - remove hardness of water
  - fit dye with fibre.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following  $3 \times 5 = 15$

- What is colour index ? Describe the system briefly.
- Describe various desizing methods.
- Describe chromophore, auxochrome and solubilising groups of dyes.
- Describe the methods of whitening textile materials.
- Describe mass colouration methods briefly.
- Write a short note on high fixation reactive dyes.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

- What chemical reactions occur during scouring of cotton materials ? 5
  - Describe various modern methods of scouring and bleaching of cotton fabrics. 10
- What are the reasons of increasing popularity of reactive dyes ? 2
  - Name various types of reactive dyes. 3
  - Describe various methods of dyeing cotton fabrics with reactive dyes. 10



- 10. a) Name various machines used for dyeing of textile fabrics. 3
- b) Compare their merits and demerits. 4
- c) Describe a winch or jet dyeing machine. 8
- 11. a) Classify acid dyes used for wool dyeing. 2
- b) Describe each class briefly. 5
- c) Describe the methods of application of each class of acid dyes on wool briefly. 8
- 12. a) Compare various classes of dyes suitable for dyeing of cotton materials. 7
- b) Describe principle and method of application of vat dyes on cotton materials. 8

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