

# 17467

11819

**3 Hours / 100 Marks**

Seat No.

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- 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.

**Marks**

1. **Attempt any FIVE of the following:** **20**
- Define the terms:
    - Percentage shade and
    - Affinity
  - What do you understand by the term percentage expression? How it is calculated?
  - What are direct dyes? Classify direct dyes. Comment on fastness properties of direct dyes.
  - Draw a line diagram of winch machine and write its advantages and limitations.
  - What are reactive dyes? Explain the process for dyeing of cotton using reactive dyes.
  - Classify vat dyes based on their application. List out the various steps involved in vat dyeing.
  - What is vatting? Explain the process of vatting.

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- 2. Attempt any TWO of the following:** **16**
- a) How will you carry-out dyeing of cellulose with direct dyes? Discuss on after treatments of direct dyed goods.
  - b) Explain a method of dyeing cotton with hot brand reactive dyes. Also explain the importance of after-treatments in reactive dyeing.
  - c) Stating the properties of solubilised vat dyes list out the steps involved in dyeing. Explain dyeing method using these dyes.
- 3. Attempt any TWO of the following:** **16**
- a) (i) Explain the specific function of: Exhausting agent, Dispersing agent in dyeing.  
(ii) What are azoics? Give mechanism of azoic colour formation.
  - b) Explain reactive dyeing by pad-batch and continuous technique. Also comment on fastness properties of reactive dyes.
  - c) Explain dyeing of cotton by Leuco-vat dyeing method using vat dyes. Also discuss fastness properties of vat dyes.
- 4. Attempt any TWO of the following:** **16**
- a) Give classification and properties of sulphur dyes. Write advantages and limitations of sulphur dyes.
  - b) What do you understand by the terms: Naphtholation, Diazotisation and Coupling? Explain the method of application of azoic colours on cotton.
  - c) What are basic dyes? With mechanism explain a method of dyeing wool and silk fibres using basic dyes.

- 5. Attempt any TWO of the following:** **16**
- a) (i) Give the classification and properties of Acid dyes.
  - (ii) Differentiate between Batch dyeing machine and continuous dyeing machines.
  - b) Explain a method of sulphur dyeing in detail. Also comment on faults and remedies of sulphur dyeing.
  - c) What is the dyeing mechanism of protein fibres with metal complex dyes? Explain dyeing procedure and wool using metal complex dyes in detail.
- 6. Attempt any TWO of the following:** **16**
- a) Stating the properties of natural dyes describe their application on cellulosic material. Also comment on faults and remedies.
  - b) Explain mechanism of dyeing w.r.t. Adsorption, Absorption and fixation.
  - c) With neat labelled diagram explain the construction and working of Jigger dyeing machine. Write it's advantages and limitations.
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