

# 22670

**24225**

**3 Hours / 70 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 answer 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.

**Marks**

1. **Attempt any FIVE of the following:** **10**
  - a) State the advantages of dye house planning.
  - b) Compare the speed and efficiency of flatbed and rotary screen printing machine.
  - c) State the unit for BOD and COD with their norms in textile processing.
  - d) List the types of fuels used in textile process house.
  - e) List the dyes used for dyeing of silk fibre.
  - f) Name two resins used for anti crease finishing.
  - g) State any two causes of accidents in dye house.

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- 2. Attempt any THREE of the following:** **12**
- a) State the methodology to calculate production in wet processing.
  - b) State the different methods of conserving and reusing water in textile processing.
  - c) Describe methods to minimize energy consumption in bleaching department with the example.
  - d) Describe advantages and disadvantages of proper lighting in processing industry.
- 3. Attempt any THREE of the following:** **12**
- a) Describe the production norms for scouring of 100% cotton fabric on CBR machine.
  - b) Calculate quantity of water required for dyeing of polyester with disperse dye on jet machine (weight of fabric 100 kg).
  - c) Calculate energy required to dry 10000 meter 100% cotton fabric. (Linear density 8 m/kg.).
  - d) Summarise quantity of chemicals required for dyeing of 1000 mt 100% cotton fabric with reactive dye.
- 4. Attempt any THREE of the following:** **12**
- a) Describe the parameter to be considered during construction of modern process house.
  - b) Calculate number of singeing machine required for singeing with following parameter. Quantity = 100% cotton Machine = osthoff gas singeing machine. Quantity = 1,75,000 meters Linear density = 8 m/kg.
  - c) Calculate the cost of water per meter and quantity of water consumed in process house for following data:
    - Fabric = 100% Cotton
    - Quantity = 3,50,000 mt.
    - GLM = 200 gms
    - Cost of water = 18 Rs./m<sup>3</sup>.
    - Process = Mercerisation and CBR bleaching.

- d) Calculate quantity required of steam for dyeing of 750 kg of 100% cotton fabric on 150 kg fully automatic jigger. Fabric is to be dyed with reactive dye with 3% shade. Linear density of fabric is 8 met/kg.
- e) Calculate dyes and chemical required to dye 50,000 meter 100% cotton fabric with 5% sulphur dye. (GSM = 200, Width = 1.5 m, Machine - Fully automatic jigger).

**5. Attempt any TWO of the following:**

**12**

- a) Justify the statement “Mumbai is the best location for textile industry in India”.
- b) Calculate GSM of fabric, if 75,000 m fabric is scoured in 2 ton capacity kier with 3 number of machine. (width of fabric = 1.5 m).
- c) Calculate cost of water per meter for printing the fabric with following details:
  - i) Quality = 100% cotton
  - ii) Quantity = 40,000 meter
  - iii) Linear density = 8 m/kg.
  - iv) Machine = rotary screen printing m/c
  - v) No. of colour = 8 colour
  - vi) Mesh size = 80
  - vii) % coverage = 125
  - viii) Total consumption = 25000 kg.

**6. Attempt any TWO of the following:****12**

- a) Calculate total electric energy required and cost of electric energy for following data.
- i) Quantity = 10000 m
  - ii) Width = 150 cm
  - iii) M/C = Rotary screen printing for cotton fabric
  - iv) Number of colour = 8.
- b) Calculate cost of chemical for dyeing of 100% cotton fabric –
- Quantity = 1,00,000 meter
  - Linear density = 12 m/kg.
  - Cost of dye = 200 Rs/kg.
  - Cost of NaCl = 10 Rs/kg
  - Cost of  $\text{Na}_2\text{CO}_3$  = 20 Rs/kg
  - (Machine = jigger)
- c) Explain the causes of accidents in wet processing. Also state remedies to avoid accidents.
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