

# 22672

**23124**

**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 answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) 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) List primary and secondary colours in subtractive colour mixing.
  - b) Define diffuse reflection.
  - c) Define the term ‘Standard Illuminants’.
  - d) State formulae to calculate ‘Total colour difference’.
  - e) Define ‘Metamerism’.
  - f) List inputs required for recipe formulation application.
  - g) Define ‘Tolerance limits’ for pass/fail application.
- 2. Attempt any THREE of the following :** **12**
- a) Describe construction and working of single beam spectrophotometer with a neat sketch.
  - b) Describe precautions to be taken during measurement of reflectance of physical samples on spectrophotometer.
  - c) Justify the importance of trial dyeing for recipe formulated by CCM.
  - d) Describe the process of K/S data generation.

P.T.O.

**3. Attempt any THREE of the following :**

**12**

- a) Depict reflectance curve of dark, light, bright, dull shades with neat sketches.
- b) Calculate total colour difference from given data and compare sample with standard with respect to depth and tonal variation.

	Standard	Sample
L	58	51
a	1.28	1.11
b	-2.37	-3.18

- c) Describe types of metamerism.
- d) Describe importance of batch correction application.

**4. Attempt any THREE of the following :**

**12**

- a) Describe features of CIE system.
- b) Analyse the result of a sample

$$dL = -10.2$$

$$da = 2.1$$

$$db = 1.8$$

If customer ready to accept redder, yellower and darker shade with  $dE < 1.0$ , will the above sample be passed ?

- c) Describe the procedure to evaluate washing fastness rating on CCM.
- d) Describe Colour Inconstancy Index (CII)
- e) Justify the importance of 'shade library' application of CCM.

- 5. Attempt any TWO of the following :** **12**
- a) Describe calibration procedure of reflectance spectrophotometer.
  - b) Describe precautions to be taken to maintain performance of reflectance spectrophotometer.
  - c) Describe steps involved to prepare database of dyes for recipe formulation application.
- 6. Attempt any TWO of the following :** **12**
- a) State challenges with their solution in using recipe formulation application for blended fabrics.
  - b) Describe tolerance limits and pass/fail application of CCM.
  - c) Describe the procedure and advantages of shade sort application.
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