

**17343****21415**

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.

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

**MARKS**1. Answer **any five** :**(5×4=20)**

- Explain the importance of intermediates in dyestuff industry.
- Define auxochrome. Explain their role in the structure of dyestuffs.
- Distinguish between dyes and pigments.
- Define vat dye, sub classify it, giving an example of each.
- Explain with examples, the importance of sulphanilic acid as an intermediate for dyes.
- Write the method for preparation of yellow anthraquinone dyes. Where is the dye used ?
- Explain the meaning of :
  - DPM dyes
  - TPM dyes

2. Answer **any two** :**(2×8=16)**

- Write about status of Indian dye industry.
  - Distinguish between colour and dye.
- Explain the additive and subtractive colour mixing theory with suitable examples.
  - State factors governing absorption of light.

**P.T.O.**



c) i) Define pigment.

ii) What are polycyclic pigments ? Name a polycyclic pigment containing copper. Classify this pigment based on colour.

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iii) Why is the above pigment considered a dream pigment ?

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3. Answer **any two** :

(2×8=16)

a) Explain in the mechanism of dyeing with adsorption, diffusion and dye fixation behaviour of reactive dyes on cotton.

b) Describe with examples : bathochromic and hypsochromic effect.

c) Explain the colour index and its significance for textile dyes and pigments.

4. Answer **any two** :

(2×8=16)

a) i) Describe the destructive distillation of a coal tar.

ii) Name the biproducts obtained during the process of dyestuff manufacturing. Where are they used ?

b) Explain the terms absorption, reflection, transmission in the interaction of radiation with the matter.

c) Write the preparation methods for following intermediates :

i) Gamma acid and

ii) Naphthionic acid

5. Answer **any two** :

(2×8=16)

a) Explain relation between chemical structure and

i) Fastness properties of dyes    ii) Substantivity of dyes.

b) i) Write chemical name and represent structural formula of H-acid and J-acid.

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ii) Where are these intermediate used ?

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iii) Indicate with reaction(s) and reaction conditions, preparation of metanilic acid.

c) Write the preparation methods for nitro dyes.

6. Answer **any two** :

(2×8=16)

a) What is meant by dye ? Explain the classification of dye based on method of application and chemical structure.

b) Explain the methods for preparation of cold brand reactive dyes and hot brand reactive dyes.

c) Differentiate between HE brand and ME brand reactive dyes with their application methods.

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