

Exam.Code:5003  
Sub. Code: 10917

2125  
NEP U.G. Common-Inter Disciplinary Course  
Third Semester  
Chemistry  
Paper: Colours and Dyes

Time allowed: 3 Hours

Max. Marks: 45

*NOTE: Attempt three questions in all, including Question No. V (Unit-III) which is compulsory and selecting one question each from Unit I - II. The use of scientific calculators is not allowed.*

x-x-x

**UNIT - I**

- I. a) Explain the early history of pigments and dyes.  
b) Discuss the physical and chemical basis of colour.  
c) What is visible light? Explain its role in colour formation. (3x5)
- II. a) Describe the classification of synthetic dyes.  
b) Write the synthesis of Methyl Orange and Prussian Blue.  
c) Explain the properties of synthetic dyes. (3x5)

**UNIT-II**

- III. a) Explain the sources and extraction methods of natural dyes.  
b) Discuss environmental and sustainability concerns associated with textile dyes.  
c) Describe any two natural dyeing processes. (3x5)
- IV. a) Differentiate between organic and inorganic pigments.  
b) Write short notes on:  
i) Pigments for special effects  
ii) Colour in decorative cosmetics  
c) Discuss the applications of high-technology dyes and pigments in real life. (3x5)

**UNIT - III**

- V. (A) Choose the correct answer (MCQ):-  
1. The colour we perceive in an object is due to:  
i) Its density  
ii) Its ability to absorb/reflect wavelengths  
iii) Its temperature  
iv) Its solubility

P.T.O.

(2)

2. Methyl Orange belongs to which class of dyes?
  - i) Azo dye
  - ii) Vat dye
  - iii) Acid dye
  - iv) Basic dye
  
3. Prussian Blue is an example of:
  - i) Organic pigment
  - ii) Inorganic pigment
  - iii) Natural dye
  - iv) Lake pigment
  
4. Natural dyeing is considered environmentally friendly because it:
  - i) Is faster
  - ii) Uses renewable resources
  - iii) Is cheaper
  - iv) Requires synthetic mordants
  
5. Chrome yellow contains the metal:
  - i) Iron
  - ii) Chromium
  - iii) Copper
  - iv) Nickel

(5x1)

(B). Short Answer Questions:-

1. Define colour.
2. What are natural dyes? Give one example.
3. What is meant by "special effect pigments"?
4. Write any two properties of synthetic dyes.
5. What is the role of the human eye in colour perception?

(5x2)