

SEAT No. _____

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[57/A-38]

SARDAR PATEL UNIVERSITY
M.Sc. CHEMISTRY
Semester – III, External Examination
April 19, 2017 (Wednesday)
Time: 2:00 pm - 05:00 pm
Synthetic Dyes and Pigments [PS03ECHE01]

N.B. *Figures to the right indicate full marks

[Total Marks – 70]

Q.1 Answer the following multiple choice questions.

[08]

- 1 Dye forming process is a process used in
 (a) Electronic dyes (c) Biological dyes
 (b) Color photography (d) Electrical dyes
- 2 From the following _____ is independent chromophore.
 (a) carbonyl (b) azoxy (c) Ethylenic (d) thiocarbonyl
- 3 _____ Dyes are used to overcome poor photo stability of liquid crystal dyes.
 (a) Azo (b) Azoic (c) Indigo (d) Anthraquinone
- 4 _____ is used as a food colour from the following.
 (a) Indigo (b) Saframine T (c) Amaranth (d) NIR
- 5 According to Dewar's theory any electron accepting group at stated position should cause _____ shift.
 (a) hypochromic (b) bathochromic (c) hypsochromic (d) hyperchromic
- 6 Security marks and features that are not visible under normal light are made with _____.
 (a) Fluorescein (b) Luminescent pigments (c) Special dyes (d) All of above
- 7 _____ is the complimentary color of green color.
 (a) Blue (b) yellow (c) orange (d) gray
- 8 Natural leather can be dyed with dye.
 (a) Mordant dyes (b) yellow dyes (c) acid dyes (d) basic dyes

Q.2 Answer the following questions. (ANY SEVEN)

[14]

- 1 Explain Red and Violet shift.
- 2 Explain Leather dye.
- 3 Write a note on type of fibers used for dyeing.
- 4 Explain methods of Textile Printing in short.
- 5 Write a short note on azoacetoacetanilide pigment.
- 6 Write characteristics of functional dyes.
- 7 Give structure of any two Novel Chromophore.
- 8 Write structure of any two metal free pigment.
- 9 Give the difference between dye and pigment.

Q.3

[A] Write a note on VB Theory. [06]

[B] Write Synthesis of ANY THREE from the following [06]

- 1 Malachite green
- 2 Stilbene azo.
- 3 Crystal Violet.
- 4 Alizarine.
- 5 Fluorescein.

Q.4

[A] Explain the pretreatment of textile fibers and dyeing mechanism. [06]

[B] Write a Brief Note on ANY TWO of the following. [06]

- 1 Color photography
- 2 Non textile dyes
- 3 Food Dyes
- 4 Explain Ionic and covalent Interaction between dye and fiber.

Q.5

[A] Give synthesis, discuss construction and applications of indigo dye. [06]

[B] Explain the following: [06]

- (I) Liquid crystal dye (II) Near infrared absorption (NIR) dyes

OR

[B] Answer the following [06]

- 1 What is Donor-Acceptor Chromophore? Write approach to achieve bathochromic shift in Donor-Acceptor Chromophore.
- 2 Explain Medicinal and Security application of colorants.

Q.6

[A] What is FBA? Write its characteristics and give synthesis of any two fluorescent brightening agent. [06]

[B] Answer the following questions. [06]

Enlist the type of pigments and explain inorganic pigments.

OR

[B] Answer the following questions.

- I Explain applications of organic pigments.
- II Explain the lake of acids.

BEST OF LUCK