

177

SEAT No. _____

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SARDAR PATEL UNIVERSITY
M.Sc. CHEMISTRY
Semester – III, External Examination
March 27, 2019 Wednesday
Time: 02:00 am - 05:00 pm
Synthetic Dyes and Pigments [PS03ECHE01]

[Total Marks – 70]

N.B. Figures to the right indicate full marks

Q.1 Answer the following multiple choice questions. [08]

- Charcoal is an _____.
(a) azo dye (b) AQ dye (c) organic pigment (d) inorganic pigment
- Amaranth is used as a _____.
(a) food color (b) paint (c) leather colour (d) hair color
- From the following _____ is dependent chromophore.
(a) azoxy (b) nitro (c) nitroso (d) thiocarbonyl
- _____ Dyes are used to overcome poor photo stability of liquid crystal dyes.
(a) Azo (b) Azoic (c) Indigo (d) Anthraquinone
- _____ is used as 4-8 percent Ointment for growth of epithelium over ulcers.
(a) Scarlet Red (b) Scarlet blue (c) anthraquinone (d) malachite green
- _____ from the following is white inorganic pigment.
(a) Titanium dichloride (b) Titanium dioxide (c) Tin oxide (d) None of above
- According to Dewar's theory any electron accepting group at stered position should cause _____ shift.
(a) hypochromic (b) bathochromic (c) hypsochromic (d) hyperchromic
- The complementary colour of blue colour is _____.
(a) Yellow (b) red (c) green (d) white

Q.2 Answer the following questions. (ANY SEVEN) [14]

- Describe modern high grade pigments.
- Explain the statement, 'As number of conjugation increases colour of the dye deepens.' using effect of conjugation on colour of the dye.
- List different type of fibers used for dyeing.
- Discuss different methods of Textile Printing in brief.
- Give synthesis of azoacetoacetanilide pigment.
- Write characteristics of functional dyes.
- Draw structure of any two Novel Chromophore.

(1)

(P.T.O.)

- 8 Write structure of any two metal free pigment.
9 Explain Blue And Red shifts.

Q.3

[A] Write postulates of VB theory and explain it with suitable example. [06]

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

- 1 Alizarin. 2. Picric acid
3 Crystal Violet. 4. Quinazarine 5. Fluorescein

Q.4

[A] Describe steps of dyeing processes along with finishing process. [06]

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

- 1 Medicinal dyes
2 Hair Dyes
3 Food Dyes
4 LED

Q.5

[A] Discuss approach to achieve NIR dyes and applications. [06]

[B] Answer the following questions. [06]

- 1 Write synthesis of Indigo dyes.
2 Write a note on Cyanine type chromophore.

OR

[B] Answer the following [06]

- 1 Write approach to achieve bathochromic shift in Donor-Acceptor Chromophore.
2 Write a brief note on colour Photography.

Q.6

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

[B] Answer the following questions. [06]

- I Write a brief note on azo pigments and lakes.
II Describe metal complexes of pigments.

OR

[B] Answer the following questions.

- I Write synthesis of isoindolines.
II Explain the lake of acids.

— X —
②

OR