[82] Seat No :_____ No of Printed Pages: 02

SARDAR PATEL UNIVERSITY
M.Sc. CHEMISTRY
Semester – III, External Examination
November 25, 2019 Monday
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]**

1 _____ from the following is white inorganic pigment.
(a) Titanium dichloride (b) Titanium dioxide (c) Tin oxide (d) None of above

2 According to Dewar's theory any electron accepting group at stared position should cause _____shift.
(a) hypochromic (b) bathochromic (c) hypsochromic (d) hyperchromic

3 _____ from the following is an inorganic pigment.
(a) sulfuric acid (b) oxides (c) Red dust (d) Charcoal

4 _____ is not a natural dye from the following.
(a) Indigo (b) Tumeric (c) Amaranth (d) NIR

5 _____ is used as 4-8 percent Oinment for growth of opithelium over ulcers.
(a) Scarlet Red (b) Scarlet blue (c) anthraquinone (d) malachite green

6 The complementary colour of yellow colour is_____.
(a) blue (b) red (c) green (d) white

7 _____ Dyes are used to overcome poor photo stability of liquid crystal dyes.
(a) Azo (b) Azoic (c) Indigo (d) Anthraquinone

8 From the following ,_____ is not a dependent chromophore.
(a) carbonyl (b) azoxy (c) Ethylenic (d) thiocarbonyl

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

1 Write a short note on azoacetoacetanilide pigment.
2 Write a note on effect of conjugation on colour of the dye.
3 Write a note on type of fibers used for dying.
4 Explain methods of Textile Printing in short.
5 Draw plot of absorption spectra and using it explain different shifts with changes in wavelength.
6 Write characteristics of functional dyes.
7 Give structures of any DPP and Isoindolines.

(P.T.O)

8 Write structure of any two metal free pigment.
9 Explain modern high grade pigments.

Q.3[A] Write a Note on VB theory and explain it with suitable example. **[06]**

[B] Write Synthesis of ANY THREE from the following **[06]**
1 Amido yellow E.
2 Bismark brown.
3 Methyl Violet.
4 Alizarin.
5 Fluorescene.

Q.4[A] Write a note on different type of Fastness properties of a true dye. **[06]**

[B] Write a Brief Note on ANY TWO of the following. **[06]**
1 LCD
2 Medicinal Dyes
3 Food Dyes
4 Indicator Dyes

Q.5[A] Write a Brief note on Near Infrared Absorption(NIR) Dyes; Introduction, approach to achieve NIR dyes and applications. **[06]**

[B] Answer the following questions. **[06]**
1 Describe Cyanine type chromophore.
2 Give synthesis and discuss construction of indigo dye.

OR

[B] Answer the following **[06]**
1 What is Donor-Acceptor Chromophore? Write approach to achieve bathochromic shift in Donor-Acceptor Chromophore.
2 Explain colour Photography.

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]**
I Write a brief note on azo pigment and lakes.
II Explain metal complexes of pigments.

OR

[B] Answer the following questions.

I Distinguish Dye and pigments.
II Explain the lake of acids.

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