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47/A-14

SEAT No. _____

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Sardar Patel University

B. Sc. (Semester – VI) Examination

Date: 25th March 2019, Monday

Time: 10:00am to 01:00pm

Industrial Chemistry

Course No: US06CICH01 (Synthetic Dyes And Intermediates)

Notes: Figures to the right indicate full marks.

Total marks: 70

Q.1 Answer the following Multiple Choice Questions. (All are compulsory) (10)

1. Amino and hydroxyl groups are.....

A. Chromophores.	C. Chromogens.
B. Auxochromes.	D. Electron accepting groups.
2. Chromophores are the group leads to.....
 - A. Appearing of color in organic compound.
 - B. Deepening of the color of organic compound.
 - C. Lightening of the color of organic compound.
 - D. All of them.
3. Types of dye binding to the fiber are.....
 - A. Covalent bonds.
 - B. Ionic bonds.
 - C. Hydrogen bond and van der waals forces.
 - D. All of them.
4. Orange-I is prepared by coupling of diazonium salt of sulphanic acid with.....

A. Alpha Naphthol	C. Phenol.
B. Beta Naphthol	D. None of them.
5. "Chrysoidine dye" is prepared by coupling benzene diazoniumchloride with.....
 - A. *o*-phenylenediamine.
 - B. *m*-Phenylenediamine.
 - C. *p*-Phenylenediamine.
 - D. None of them.
6. Acid dyes are.....
 - A. The sodium salts of sulphonic and carboxylic acids.
 - B. Water insoluble cationic dyes.
 - C. Salts of amines.
 - D. None of them.
7. The oldest known dye is.....

A. Indigotin dye.	C. Phenolphthaleine dye.
B. Congo red dye.	D. Orange-II dye.
8. Cyanuricchloride based reactive dyes known as.....

A. Procion dyes.	C. Thiazol dyes.
B. Remazol dyes.	D. Heterocyclic dyes.
9. "Sulfanilic acid" estimation is made by....

A. Direct method.	C. Special method.
B. Indirect method.	D. All of them.
10. Poly-hydroxyl Napthalene is determined in exactly the same way as.....

A. Alpha-naphthol	C. Phenol.
B. Beta-naphthol	D. H-acid.

①

(P.T.O.)

Q-2 Answer the following short question (Any TEN)

(20)

1. Give an example of "Independent chromophores".
2. Define term "Bathochromic Auxochromes".
3. Giving suitable example, define term "Chromogen".
4. Explain an azo dye of " $E \leftarrow D \rightarrow M \rightarrow E_1$ " class based on Lapworth's notation.
5. Define term "Mordent Azo Dyes".
6. Indicate medium and position of coupling in "Chromotropic acid".
7. Write a synthesis of "Disperse Orange-1".
8. Write a structure of "Thioindigo dyes".
9. Give the various advantages of Reactive dyes over Pigment.
10. Define term "Nitrite value".
11. What mean by "Iodometry titration".
12. Give an account of light fastness of dyes.

Q-3 Explain the following statements using Witt's theory of colors.

(10)

- A. Benzene, Naphthalene & Anthracene are colorless
- B. Nitrobenzene is yellow whereas p-nitro aniline is deep yellow.
- C. Ethylene is colorless whereas β -carotene is orange red.

OR

Q-3 Write a detail notes on "Postulates of M.O. theory" and "Resonance theory" for colors.

(10)

Q-4 Write a notes on following:

(10)

- A. Give classification of Azo dyes on the basis of applications.
- B. Direct & Indirect methods of diazotization.

OR

Q-4 Write a notes on following:

(10)

- A. Effect of substituents on diazotization and coupling reaction.
- B. An account of stabilized diazo compound and diazo coupling.

Q-5 Write various methods for preparation of Indigotin.

(10)

OR

Q-5 What are Vat dyes? Giving a chemistry, write an account of Anthraquinone Vat dyes.

(10)

Q-6 Write a notes on following:

(10)

- A. Procedure to determination of Beta Naphthols.
- B. Method for determination of amines.

OR

Q-6

- A. Discuss the procedure for purification & preparation of 0.1M Sulfanilic acid solution.

(05)

- B. Write a note on preparation of standard nitrous acid solution.

(05)

