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Sardar Patel University

B. Sc. (Semester – VI) Examination

Date: 26th March 2018, Monday.

Time: 10:00 to 01:00pm

Industrial Chemistry Vocational

COURSE NO: US06CICV01 (DYES AND INTERMEDIATES)

Notes: Figures to the right indicate full marks.

Total marks: 70

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

1. Dye are classified according to _____.
 - a. the method of application.
 - b. their chemical constitution.
 - c. the material to be dyed.
 - d. All of these.
2. Any group or factor that produces the deepening of the color is known as _____.
 - a. Chromophore.
 - b. Auxochrome.
 - c. Bathochrome.
 - d. Hypsochrome.
3. If the light is absorbed completely the substance will appear _____.
 - a. white
 - b. red
 - c. black
 - d. blue
4. Orange-II is prepared by coupling of diazonium salt of sulphanilic acid with _____.
 - a. α -naphthol
 - b. β -naphthol
 - c. phenol
 - d. cresol
5. What is a mordant?
 - a. A chemical that stops the dye process.
 - b. A dye color that bites into the fibre.
 - c. A metallic ion or salt added to the dye bath to make
 - d. None of these.
6. _____ is the most widely used metal in mordent azo dye.
 - a. Chromium
 - b. Chloride
 - c. Aluminium
 - d. Beryllium
7. The oldest known dye is _____.
 - a. Indigotin
 - b. Congo red
 - c. Phenolphalein
 - d. Orange-II
8. Vat dyes are dyes used in their _____.
 - a. reduced state
 - b. oxidised state
 - c. neutral state
 - d. none of these
9. Estimation of β -naphthol is performed in _____.
 - a. acidic pH
 - b. basic pH
 - c. neutral
 - d. any pH
10. Sulphanilic acid is estimated by _____.
 - a. direct method
 - b. indirect method
 - c. special method
 - d. none of these

(1)

(P.T.O.)

Q.2 Answer the following short questions, (Any TEN) (20)

1. Give minimum requirements of colouring substances to be called as dye?
2. Explain benzene is colourless, nitrobenzene is pale yellow and p-nitro aniline is dark yellow.
3. Crystal violet has one principal absorption peak while malachite green has two absorption peaks
4. Explain the term diazo compound by giving suitable example.
5. Indicate medium and position of coupling in J-acid.
6. Give the structure of H-acid and R-acid.
7. What are reactive dyes? Why are they so called?
8. Give the difference between reactive dye and direct dyes.
9. Discuss the limitation of Reactive dyes.
10. Give general procedure for purification of Sulfanilic acid?
11. Define following term: 1. Nitrite value 2. Coupling value
12. Write reaction for estimation of NO_2 group?

Q.3.a. Outline the different postulate of Modern theory for colours. (05)

- b. Write Witt's theory and explain how this theory relates colors and chemical constitution. (05)

OR

Q.3.a. Discuss the Armstrong theory of color. (05)

- b. Write a detail classification of dyes according to their method of applications. (05)

Q.4. Write a notes on following: (10)

- a. Define term Azo dye and classify it on the basis of application.
- b. Write a note on the effect of substitutes on diazotization.

OR

Q.4. Write a notes on following: (10)

- a. Lapworth's notation for Azo dyes.
- b. Stabilization of diazo compound for a coupling reaction.

Q. 5. Give an account of disperse dye and outline its mechanism of application. (10)

OR

Q.5. Giving suitable examples write classification of Reactive dye. (10)

Q.6. Write notes on following: (10)

- a. Estimation method for Amines by direct method.
- b. Preparation and standardization of 0.1N NaNO_2 solution.

OR

Q.6.a. Discuss a procedure for determination of α -Naphthols. (05)

- b. Discuss the procedure for preparation of 0.1N Sulfanilic acid solution. (05)

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