

[48]

# Sardar Patel University

B. Sc. (Semester – VI) Examination

Date: 25<sup>th</sup> March 2019, Monday.

Time: 10:00 to 01:00 pm

Industrial Chemistry (Vocational)

COURSE NO: US06CICV01 (DYES & INTERMEDIATE)

Notes: Figures to the right indicate full marks.

Total marks: 70

**Q1. Answer the following MCQ** [10]

1. Reactive dyes forms \_\_\_\_\_ bond with fibre possessing hydroxyl and amino group.  
a. Covalent      b. Hydrogen      c. ionic      d. none of these
2. The groups, which leads to the deepening color of organic substance called \_\_\_\_\_.  
a. Auxochromes      b. Chromophores      c. Bathochromes      d. Chromogen.
3. The stability diazonium salt decrease by increase of \_\_\_\_\_ in benzene ring.  
a. Electron releasing group      b. Electron accepting group  
c. Neutral groups      d. None of above
4. In acidic azo dye the acidic group acts as \_\_\_\_\_.  
a. Auxochromes      b. Chromophores      c. Bathochromes      d. Chromogen.
5. Orange II is prepared by coupling of diazonium salt of sulphinilic acid with \_\_\_\_\_.  
a.  $\alpha$  naphthol      b.  $\beta$  naphthol      c. phenol      d. none of these
6. Reactive dye form \_\_\_\_\_ bond between carbon of the dye molecule and substrate.  
a. Co-valent      b. H-bond      c. Ionic bond      d. none of these
7. Alizarin orange is obtaining by \_\_\_\_\_ alizarin in the presence of boric acid.  
a. nitrating      b. sulphonating      c. chlorinating      d. brominating
8. Estimation of azo dye involved \_\_\_\_\_.  
a. reduction reaction      b. oxidation reaction      c. redox reaction      d. none of these
9. Titanium trichloride is on oxidation converted to the colourless \_\_\_\_\_.  
a.  $Ti(OH)_4$       b.  $Ti(COOH)_4$       c.  $Ti(Cl)_4$       d.  $TiO_2$
10. Estimation of  $\beta$ -naphthol is performed in \_\_\_\_\_.  
a. acidic pH      b. basic pH      c. neutral      d. any pH

**Q2. Answer the following short question (Any Ten)** [20]

- 1 Define the terms Colour.
- 2 Give minimum requirements of colouring substances to be a dye?
- 3 Explain benzene is colourless and nitrobenzene is pale yellow.
- 4 Explain the term diazocompound by giving suitable example.
- 5 Give structure and coupling positions of a. Resorcinol      b. J-acid
- 6 Give the structure and name of any two monoazo dyes.
- 7 Write properties & uses of disperse dye?
- 8 What are reactive dyes? Why are they so called?
- 9 Discuss the limitation of reactive dye.
- 10 Define term Iodometry titration.
- 11 Write reaction for estimation of  $-N=O$  group.
- 12 Write a role of  $AgNO_3$  in the estimation of chloride.

[P.T.O.]

Q3. Write Witt's theory and explain how this theory relates colours and chemical constitution. [10]

OR

Q3. Give the classification of dye according to method of applications. [10]

Q4.a. Explain in detail direct methods for the diazotization. [05]

b. Write a note on stabilization of diazonium salt. [05]

OR

Q4.a. Give the classification azo dye on the basis of application. [05]

b. Explain briefly Lapworth notation for Azo dye. [05]

Q5. Write a detail notes on Vat dyes. [10]

OR

Q5. Give the classification of Reactive dye. [10]

Q6. Write a note on following. [10]

a. Estimation of Naphthol sulfonic acids

b. Estimation of H acid.

OR

Q6. Discuss the following. [10]

a. Estimation method for Amines by direct method.

b. Preparation and standardisation of  $\text{NaNO}_2$  solution

\*\*\*

— X —

②