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Seat No. (05)

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[42/A16]

SARDAR PATEL UNIVERSITY
T.Y. B.Sc. (Semester VI) Examination

Date: 26th March 2018, Monday

Time: 10:00 AM to 1:00 PM

Industrial Chemistry

COURSE NO. US06CICH01 (Synthetic Dyes and Intermediates)

Note: Figures to the right indicate full marks

Total Marks : 70

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

1. The groups which lead to the deepening of colour of organic substance are called _____

| | |
|-----------------|----------------------|
| A. Auxochromes | C. Oxidizable Groups |
| B. Chromophores | D. Reducible Groups |
2. Azo dyes are formed in _____ steps.

| | |
|--------|----------|
| A. One | C. Three |
| B. Two | D. Four |
3. Orange-II is prepared by coupling benzene diazonium chloride with _____

| | |
|-----------------------|------------|
| A. α -Naphthol | C. Phenol |
| B. β -Naphthol | D. Toluene |
4. Anthraquinone vat dyes are the dyes used in their _____ state

| | |
|-------------|----------------------|
| A. Oxidized | C. Neutral |
| B. Reduced | D. None of the above |
5. Cyanuric chloride is used in the synthesis of _____ dyes as reactive system.

| | |
|------------|-------------|
| A. Procion | C. Thiazole |
| B. Remazol | D. Vat |
6. $-\text{NO}_2$, $-\text{NO}$, $-\text{N}=\text{N}-$ groups are known as _____

| | |
|-----------------|------------------------------|
| A. Auxochromes | C. Electron Releasing groups |
| B. Chromophores | D. None of them |
7. Silver nitrate method is used for the estimation of _____

| | |
|-------------|-------------|
| A. Chromium | C. Copper |
| B. Nickel | D. Chloride |
8. The reagent used for strong acids is _____

| | |
|--------------------------|--------------------|
| A. Phenolphthalein paper | C. Congo red paper |
| B. Thiazole paper | D. Lead paper |
9. Types of dye binding to the fibre are _____

| | |
|-----------------------------|-------------------------|
| A. Covalent and Ionic bonds | C. Van der waals forces |
| B. Hydrogen bond | D. All of the above |
10. Congo red dye is prepared by coupling tetrazotized benzidine with two molecules of _____

| | |
|--|-----------------------------|
| A. α -Naphthyl amine-4-sulphonic acid | C. Phenol-4-sulphonic acid |
| B. β -Naphthyl amine-4-sulphonic acid | D. p-Toluene sulphonic acid |

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(P.T.O.)

Q.2. Answer the following short questions. (ANY TEN)

(20)

1. Write in brief about Mordant dyes
2. What are the impacts on colour of the substance when a white light is incident on it?
3. Discuss the role played by change in dipole moment in explaining the colour of substance.
4. Indicate the medium and coupling position in H-acid and J-acid.
5. Write down the synthesis of Naphthol Blue Black 6B.
6. Write the structure of 1,6-Cleve's acid and Chromotropic acid.
7. Write down the synthesis of Procion Brilliant Red 5B.
8. Define Reactive dyes and list its limitations.
9. Giving the structure of Thioindigo dyes, indicate a chromophoric part of the dye.
10. Mention the names by which aminonaphtholsulphonic acid are determined and define them.
11. Write the reaction for the estimation of -N=N- group.
12. What do you mean by Iodimetry and Iodometry titration?

Q.3. Discuss the classification of dyes on the basis of mode of application

(10)

OR

Q.3. Explain Witt's theory in detail.

(10)

Q.4. Write a note on following:

(A) Lapworth's notation for Azo dyes

(5)

(B) Direct Method of diazotization of Azo dyes

(5)

OR

Q.4. Explain mechanism of diazotization and write a note on classification of Azo dyes

(10)

Q.5. Write a note on following:

(A) Role of levelling and Dispersing agents in Disperse dyes

(5)

(B) Method of Application of Reactive Dyes.

(5)

OR

Q.5. (A) Discuss Anthraquinone Mordant Dyes.

(6)

(B) Give synthesis of Indenthron from 1,5-diaminoanthraquinone

(4)

Q.6. (A) Discuss the procedure for the direct determination of amines

(5)

(B) Discuss the procedure for Estimation of chromium

(5)

OR

Q.6. (A) Discuss the procedure for Estimation of fluoride by SPADNS method

(5)

(B) Discuss the procedure for determination of α -naphthol and β -naphthol

(5)

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