



BBF-003-1016026

Seat No. _____

B. Sc. (CBCS) (Sem. VI) Examination

July - 2021

IC-601 : Dyes & Intermediates

Faculty Code : 003

Subject Code : 1016026

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) Question paper carries total 10 questions.
 - (2) All the question have general option & carry 14 marks each.
 - (3) Answer any 5 questions out to total 10 questions.
 - (4) Draw labeled diagram wherever necessary & Assume suitable data.

1 (A) Answer the following questions. 4

- (1) Royal purple is also known as _____.
- (2) Give a name of first natural dye.
- (3) Resonance theory is also known as _____.
- (4) $\sigma \rightarrow \sigma^*$ transition requires highest energy. True/False?

(B) Answer in brief. 2

- (1) Write a short note on Mordant dye.

- (C) Answer in detail. 3
- (1) Explain in brief: Requisites of true dye.
- (D) Write a note on. 5
- (1) Discuss Natural dyes in detail.
- 2 (A) Answer the following questions. 4
- (1) Chromophore-Auxochrome" theory is also known as _____.
- (2) On which substrate, the dyeing of basic dye is possible?
- (3) The process in which the color transferred to substrate being dyed is called _____.
- (4) Armstrong's theory is used for only quinonoid structure. True/False?
- (B) Answer in brief. 2
- (1) Define:
- (1) Color fastness
- (2) Sublimation fastness.
- (C) Answer in detail. 3
- (1) Give reason: Benzene, Naphthalene & Anthracene are colorless, Naphthacene is yellow, Pentacene is blue & Graphite is black in color.
- (D) Write a note on. 5
- (1) Explain Valence Bond Theory in detail.

- 3 (A) Answer the following questions. 4
- (1) Which catalyst is used in manufacturing of chlorobenzene from benzene?
 - (2) 2-Naphthol-6, 8-disulphonic acid is the IUPAC name of G- acid. True/False?
 - (3) Lunge nitro meter is used for the quantitative estimation of _____.
 - (4) Anthraquinone is produce by oxidation of _____.
- (B) Answer in brief. 2
- (1) Write a reaction of Chicago acid.
- (C) Answer in detail. 3
- (1) Write a short note on Sulphonation of toluene with diagram.
- (D) Write a note on. 5
- (1) Explain various experimental techniques of TLC in detail.
-
- 4 (A) Answer the following questions. 4
- (1) Atwhich temperature Naphthalene-1-Sulphonicacid is obtained from naphthalene?
 - (2) $\text{HN0}_3 + \text{H}_2\text{S0}_4$ is known as _____.
 - (3) 0-Nitro anisole is obtained from 0-Nitro chlorobenzene in presence of NaOCH_3 . True/False?
 - (4) Give IUPAC name of NW acid.

- (B) Answer in brief. 2
- (1) Enlist any four advantages of TLC.
- (C) Answer in detail. 3
- (1) Enlist various superiority of TLC over other chromatography techniques.
- (D) Write a note on. 5
- (1) Explain manufacturing of H-acid with neat & clean diagram in detail.
- 5** (A) Answer the following questions. **4**
- (1) The dye contains -N=N- chromophoric group is known as _____.
- (2) Benzopurpurin dye is obtained from 3,3'-dimethyl 4, 4'-diamino Stilbene. True/False?
- (3) In reverse method of diazotization compound is stable due to _____ (Zwitter ion/ Anion)
- (4) In sub-classes of azo dye, M stands for what?
- (B) Answer in brief. 2
- (1) Write only a reaction for manufacturing of Naphthol blue black-R.
- (C) Answer in detail. 3
- (1) Explain manufacturing of Naphthol Blue Black in brief.
- (D) Write a note on. 5
- (1) Explain in detail; Manufacturing of Sirius Supra Blue 3RL with neat & clean diagram.

- 6 (A) Answer the following questions. 4
- (1) Congo red dye is an example of direct dye. True/False?
 - (2) Brilliant yellow dye is also known as _____.
 - (3) Give a name of starting reactant for manufacturing of Rosanthrene-0 dye.
 - (4) In sub-classes of azo dye A stands for?
- (B) Answer in brief. 2
- (1) Write a short note on direct method for diazotization.
- (C) Answer in detail. 3
- (1) Write a reactions:
 - (a) Rosanthrene-0
 - (b) Bismarck brown
- (D) Write a note on. 5
- (1) Explain in detail: Manufacturing of direct Yellow-4 dye with neat & clean diagram.
- 7 (A) Answer the following questions. 4
- (1) Absorption method is used to control gaseous emission. True/False?
 - (2) Bromination reaction is done in _____ reactor. (Rubber line/ Enameled cast iron)
 - (3) Poor capacity balance is the limitation of _____.
 - (4) Clarifier is also known as _____.
- (B) Answer in brief : 2
- (1) Enlist any four properties of Disperse dye.
- (C) Answer in detail. 3
- (1) Discuss Air pollution in brief.
- (D) Write a note on. 5
- (1) Explain in detail: Optical Whiteners & Fluorescent brighteners.

- 8 (A) Answer the following questions. 4
- (1) Stilbene derivatives are the class of _____.
(Optical brightener/ Fluorescent whitener)
 - (2) Scrubber is used for controlling Air pollution.
True/False?
 - (3) Give a full form of PLC.
 - (4) In acidic condition, alkylation reaction is carried out
in _____.
(Enameled cast iron of gla! line /Mild steel)
- (B) Answer in brief. 2
- (1) Enlist various methods for controlling gaseous emission.
- (C) Answer in detail. 3
- (1) Explain in brief: Plant layout.
- (D) Write a note on. 5
- (1) Discuss various limitations of poor plant layout in detail.
- 9 (A) Answer the following questions : 4
- (1) Low labor cost is an advantage of _____.
(Reactive dye/ Pigment)
 - (2) Better output is the advantage of continuous process
for dyeing. True/False?
 - (3) Give a name of first reactive dye.
 - (4) Thefirst vat dye is introduced in _____.
- (B) Answer in brief. 2
- (1) Enlist various advantages & Disadvantages of Vat dye.
- (C) Answer in detail : 3
- (1) Write a synthesis for Procion Brilliant Red-5B &
Pyranthrone dye.
- (D) Write a note on : 5
- (1) Explain in detail: Manufacturing of Procion Blue HB.

- 10** (A) Answer the following questions. **4**
- (1) Reactive red can be prepared from?
 - (2) Vat dye has Very good chemical stability. True/False?
 - (3) The stability of reactive dye is due to?
(Covalent bond/ Hydrogen bond)?
 - (4) Pyranthrone dye is also known as _____.
- (B) Answer in brief. **2**
- (1) Write only a reaction for Flavanthrone dye.
- (C) Answer in detail : **3**
- (1) Discuss manufacturing of Indigotin dye by sand Mayer's process in brief.
- (D) Write a note on. **5**
- (1) Explain manufacturing of Indigotin dye by Bayer synthesis in detail.
-