

- Q.1A) Answer the following. (Any three) [6]
- What are Natural Dyes? Write requirement of dyes.
 - Give the structure and classification based on application of the following dyes
a) Alizarin Sky Blue B b) Cibacron Brilliant Red B
 - Explain commercial naming of dyes
 - Write the structure applications of chloramines Green B.
 - What are the optical brighteners? Give classification of it.
 - Differentiate between dyes and pigment.
- B) Answer the following. (**Any two**) [6]
- Explain N- and O- alkylation's with suitable example
 - Explain the structural features classes of anyone fibers.
 - Introduce the primary intermediates and explain diazotization.
 - Give structure and one use of the following.
a) Naphthol AS b) Celliton Fast Brown 3 R c) Malachite Green
- Q.2A) Discuss the following classes of dyes with one example from each class. [4]
- Direct cotton dyes
 - sulphur dyes
- B) Write a note on Mordant Dyeing and Disperse Dyeing. [4]
- C) Describe the important milestones in the development of the synthetic dyes [4]
OR
- Q.2A) Discuss the following classes of dyes with one example from each class. [4]
- Azo dye
 - Triphenylmethane dyes
- B) Explain the followings [4]
- methyl orange and phenolphthalein are used as indicators.
 - Benzene is colorless,while P-nitroaniline is dark yellow.
- C) Give account of dyes used for- [4]
- Leather dyes
 - food stuff
- Q.3A) How are the following dyes intermediate prepared [4]

- a) Anthraquinone -1-sulfonic acid b) anthraquinone-2-sulfonic acid
- B) Explain forces binding dyes to the fibers: Ionic forces and Vander Waal's forces. [4]
- C) Give the synthesis and one use of Diamond Black F [4]

OR

- Q.3D) How are the dyes prepared? [4]
- a) Congo Red from nitrobenzene
b) Indigo from aniline
- E) Explain the following. [4]
- a) Ecology and toxicity of dyes.
b) Economic viability, substantivity of dyes.
- F) How are the following intermediates prepared? [4]
- a) N-Wacid b) BON acid

- Q.4A) Give one example with structure of the following. [5]
- a) Nitro dyes
b) Anthraquinone reactive dyes
c) Trisazo dyes
d) Nitroso
e) Phthalocyanines

OR

- A) Give structure and classification based on application of the following [5]
- a) Methyl Violet b) Fast Yellow G
c) indathrene Brown RRD d) Benzo Fast Yellow 5 GL
e) Victoria Blue B
- B) Explain the following. [4]
- a) Heat and light fastness of the dyes are important in the textile industry.
b) Silk resembles in chemical nature with wool.

OR

- B) Give the synthesis of the Safranine Black T and P-rosaniline [4]
- C) Define Diazotization? Explain the various methods of Diazotization. [3]

OR

- C) Explain Natural dyes: [3]

- a) Chlorophyll b) Turmeric c) Logwood

Q.5A] Explain the following terms: [4]
a) Dyes and Pigments
b) Lakes and Toners

OR

A] Explain the with reaction o-phenyldiamine is dye intermediated from benzene [4]

B] Solve the following. [5]
a) Indanthrene from anthraquinone.
b) Explain halogenation process along with role of catalyst.

OR

B] Solve the following. [5]
a) Malachite green from benzaldehyde and N, N-dimethylaniline.
b) Tartrazine from ethyl acetate and dimethyl oxalate.

C] Explain the relation between color and resonance in the triphenylmethane dyes. [3]

OR

C] Explain Mordant dyes. [3]