Seat No. _____

# H-003-2016026

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

**April - 2023**

## Dyes & Intermediates : BS-IC-601

**Faculty Code : 003**
**Subject Code : 2016026**

Time : $2\frac{1}{2}$ / Total Marks : **70**

**Instructions :**

(1) Question paper carries total 5 questions.
(2) All the questions are compulsory and each carries 14 marks.
(3) Draw labelled diagram wherever necessary and assume suitable data.

**1** (a) Answer the following questions : **4**

(1) Give one example of a natural dye.
(2) "Color is due to structural oscillation of the quinonold condition" concept was given by _____.
(3) To measure the colour fastness properties which scale is applied ?
(4) If an absorption maxima shifts from Red to Violet, it is known as _____ shift.

(b) Answer in brief : (any one out of two) **2**

(1) Give a reason : Why acetone is colorless while biacetyl is yellow in color.
(2) Define :
(1) Light fastness (2) Sublimation fastness

(c) Answer in detail : (any one out of two) **3**

(1) Explain in brief : Requisites of true dye.
(2) Why p-amino azobenzene is yellow but in acidic medium it becomes violet ?

(d) Write a note on : (any one out of two) **5**

(1) Discuss : Natural dyes in detail.
(2) Discuss : Witt's Theory in detail.

**2** (a) Answer the following questions : **4**

(1) What is the IUPAC name of H-acid?

(2) Lunge nitro meter is used for the quantitative estimation of _____.

(3) Temperature required for manufacturing of chloro benzene is ____ $^{o}$C.

(4) Schaeffer's acid is a common name of _____.

(b) Answer in brief : (any one out of two) **2**

(1) Write a short note on $R_f$ value.

(2) Give a synthesis of Bromamione acid.

(c) Answer in detail : (any one out of two) **3**

(1) Discuss preparation of quinizarine with diagram in brief.

(2) Write a short note on sulphonation of toluene with diagram.

(d) Write a note on : (any one out of two) **5**

(1) Discuss in detail : Lunge Nitrometer.

(2) Explain in detail : Thin Layer Chromatography.

**3** (a) Answer the following questions : **4**

(1) The dye containing -N=N- chromophoric group is known as _____.

(2) Congo red dye is an example of _____ dye.

(3) In sub-classes of azo dye D stands for _____.

(4) In reverse method of diazotization compound is stable due to _____.

(b) Answer in brief : (any one out of two) **2**

(1) Give a synthesis for metanil yellow.

(2) Write a short note on direct method for diazotization.

(c) Answer in detail : (any one out of two) **3**

(1) Discuss : Tris azo dye with its various types in brief.

(2) Give the synthesis of Naphthol Blue Black 6B.

(d) Write a note on : (any one out of two) **5**

(1) Discuss : Manufacturing of Direct Black EW dye with neat and clean diagram.

(2) Discuss : Bis azo dye with it various types in detail.

**4** (a) Answer the following questions : **4**

(1) Give the full form of D.C.S.

(2) Sedimentation is also known as _____.

(3) What is the limitation of poor plant layout ?

(4) Scrubber is used for controlling _____.

(b) Answer in brief : (any one out of two) **2**

(1) Write any four functions of Dispersing agent.

(2) Describe : Various factors affecting an optical brightener.

(c) Answer in detail : (any one out of two) **3**

(1) Discuss : Air pollution in brief.

(2) Write a note on : Plant scale up data in factory layout for industries.

(d) Write a note on : (any one out of two) **5**

(1) Discuss : Quality Control and Factory layout for industries in detail.

(2) Explain in detail : Manufacturing of disperse Red-4 dye with schematic diagram.

**5** (a) Answer the following questions : **4**

(1) Give IUPAC name of cyanuric acid.

(2) Indigo dye is also known as _____.

(3) Who defined Reactive dye ?

(4) The stability of reactive dye is due to _____.

(b) Answer in brief : (any one out of two) **2**

(1) Enlist various advantages and disadvantages of Vat dye.

(2) Write only a reaction of Flavanthrone dye.

(c) Answer in detail : (any one out of two) **3**

(1) Explain in brief : Synthesis of Caledon jade green dye.

(2) Discuss various dyeing processes in brief.

(d) Write a note on : (any one out of two) **5**

(1) Explain : Manufacturing of Indigotin dye by Bayer synthesis in detail.

(2) Discuss : Manufacturing of Reactive Red dye in detail.

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