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P-003-1016026 Seat No. _____

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

March / April - 2020

BS - 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 5 questions.
(2) All the questions are compulsory & carry 14 marks each.
(3) Draw labelled diagrams wherever necessary.
(4) Assume suitable data.

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

(1) The first true azo dye discovered was _____

(2) Define: Pigment

(3) Elaborate the word 'Chromogens'.

(4) The solvent dye is soluble in _____ but insoluble in _____

(B) Answer in brief : (Any **One** out of Two) **2**

(1) Define : (a) Color fastness (b) Sublimation fastness

(2) Explain in brief why acetone is colorless while biacetyl is yellow in color.

(C) Answer in detail : (Any **One** out of Two) **3**

(1) What is dyeing? Explain in brief its applying methods on fiber.

(2) What is acid dye? Give two examples.

(D) Write a note on : (Any **One** out of Two) **5**

(1) Give an account of molecular orbital theory in detail.

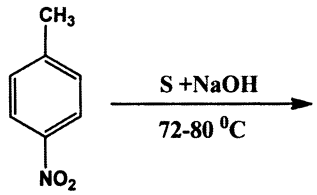
(2) Explain Witt's theory in detail.

2 (A) Answer the following questions : 4

(1) HPLC stands for what?

(2) Partition chromatography is also known as paper chromatography. True/False?

(3) Naphthalene α-sulfonic acid is produced from naphthalene at _____ °C

(4) 

(B) Answer in brief : (Any **One** out of Two) 2

(1) Enlist various factors affecting R_f value.

(2) Write a brief note on sulfonation of toluene.

(C) Answer in detail : (Any **One** out of Two) 3

(1) Discuss manufacturing of naphthalene disulfonic acid.

(2) Give classification of chromatography.

(D) Write a note on : (Any **One** out of Two) 5

(1) Discuss chlorination of benzene with diagram.

(2) Discuss synthesis of H-acid with schematic diagram.

3 (A) Answer the following questions : 4

(1) Draw the structure of G-acid.

(2) Sirius Supra Brown RL is sub class of trisazo dye. True/False?

(3) Draw the structure of Butter yellow.

(4) Give IUPAC name of Cyanuric chloride.

(B) Answer in brief : (Any **One** out of Two) **2**

(1) Give synthesis of Congo red dye.

(2) Give synthesis of EBT.

(C) Answer in detail : (Any **One** out of Two) **3**

(1) Give synthesis of Tartrazine.

(2) Discuss synthesis of Direct Yellow-4 with diagram.

(D) Write a note on : (Any **One** out of Two) **5**

(1) Explain preparation of Direct Black EW with diagram.

(2) Give synthesis of (a) Naphthol Blue Black (b) Metanil Yellow

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

(1) Disperse dyes are low molecular weight derivatives of azo, _____ and other compounds.

(2) Air pollution is caused by _____

(3) Casting, steel type instruments are used for Bechamp reduction. True/False?

(4) Secondary treatment in ETP involves _____ & _____ process.

(B) Answer in brief : (Any **One** out of Two) **2**

(1) Write various steps involved for controlling air pollution.

(2) Draw structure of Blancophor R.

(C) Answer in detail : (Any **One** out of Two) **3**

(1) Write a short note on dispersing agent.

(2) Explain (a) Pilot plant (b) Plant layout

(D) Write a note on : (Any **One** out of Two) **5**

(1) Write a detailed note on poor plant layout.

(2) Explain optical whitener and fluorescent brightner in detail.

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

(1) The first anthraquinone dye discovered was _____.

(2) Indigotin is also known as _____.

(3) The first reactive dye was introduced in _____ year.

(4) Indigo is produced by Bayer synthesis. True/False?

(B) Answer in brief : (Any **One** out of Two) **2**

(1) Give synthesis of Indigosol-O.

(2) Write synthesis of Pyranthrone.

(C) Answer in detail : (Any **One** out of Two) **3**

(1) Discuss Caledone Jade Green dye in brief.

(2) Explain preparation of Thioindigo dye.

(D) Write a note on : (Any **One** out of Two) **5**

(1) Give a detailed account of reactive red dye.

(2) Discuss synthesis of Indanthrene Rubene-R in detail.
