



BBF-003-001646

Seat No. _____

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

July - 2021

IC - 601 : Dyes-2 & Polymer Technology

Faculty Code : 003

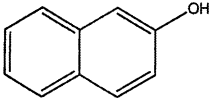
Subject Code : 001646

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

[Total Marks : 70

- Instructions :**
- (1) All the questions are compulsory
 - (2) Figures to the right indicate maximum marks.
 - (3) Draw labeled diagram wherever necessary.
 - (4) Assume suitable data.
 - (5) Question-1 carries 20 marks.
 - (6) Question-2 & 3 carry 25 marks each.

1 Answer the following questions : 20

- (1) Indanthrene yellow 4GK is an example of _____ dye. (Natural/Synthetic)
- (2) $A \rightarrow z \leftarrow A'$ is a type of bis azo dye. True/False?
- (3) Aniline yellow, Butter yellow, Metanil yellow, Bismark brown etc. are examples of _____ dye.
- (4)  is the structure of what?
- (5) Write the structure of anthraquinone.
- (6) Naphthalene- α -sulfonic acid can be produced by _____ process.
- (7) Give full form of GC.
- (8) The ratio of distance travelled by solute to solvent is known as _____
- (9) EBT is stands for what?

- (10) Chromatography is separation and purification technique. True/False?
- (11) _____ can be used as monomer for addition polymerization.
- (12) Monomer having _____ functional groups can create branched polymer.
- (13) Isoprene is an example of natural polymer. True/False?
- (14) Ziegler Natta catalyst is used for production of _____ polymer.
- (15) Give raw materials used for manufacturing of SBR polymer.
- (16) _____ can be used as initiator for free radical polymerization.
- (17) _____ is commonly called Buna-S.
- (18) Polypropylene is useful thermoset polymer. True/False?
- (19) COCl_2 is known as _____ gas.
- (20) Write full form of HDPE.

2 (A) Answer any **Three** : **6**

- (1) Define : (a) G.T.T. (b) Monomer
- (2) Discuss X-ray diffraction method for characterization of polymer.
- (3) Give preparation of Bromamine acid.
- (4) Explain in brief: Determination of α – Naphthol in brief.
- (5) What is weight average molecular weight?
- (6) Give synthesis of Chrome Blue Black R.

(B) Answer any **Three** : **9**

- (1) Give the synthesis of Congo red.
- (2) Explain in brief: Direct determination of amine.
- (3) Write a note on glass transition temperature of polymer.

- (4) Explain IR spectroscopy for analysis of monomer and polymer sample.
- (5) Write a detailed note on melamine formaldehyde with mechanism.
- (6) Write a brief note on paper chromatography.

(C) Answer any **Two** : **10**

- (1) Discuss Lung nitro meter with diagram.
- (2) Describe manufacturing of H-acid with diagram.
- (3) Discuss cationic mechanism for addition polymerization of propylene.
- (4) Explain anionic mechanism for addition polymerization of ethylene.
- (5) Discuss manufacturing of PVC with neat diagram.

3 (A) Answer any **Three** : **6**

- (1) Write types of polyisoprene in detail.
- (2) Explain homopolymer and copolymer in detail.
- (3) Write only reaction scheme of neoprene.
- (4) Explain any one method for the preparation of anthraquinone.
- (5) Give the synthesis of Tartrazine.
- (6) Give preparation of G-acid.

(B) Answer any **Three** : **9**

- (1) Give synthesis of Naphthol Blue Black 6B.
- (2) Write synthesis of Bismark brown.
- (3) Write a detailed note on nylon-6,6 with mechanism.
- (4) Give synthesis of p-nitro aniline.
- (5) Discuss manufacturing of polyurethane in detail with reaction scheme.
- (6) Explain production of Acrylonitrile butadiene styrene in detail.

(C) Answer any **Two** : **10**

- (1) Write a detailed note on various methods of diazotization.
 - (2) Describe Gas chromatography with schematic diagram.
 - (3) Discuss free radical mechanism for addition polymerization of styrene.
 - (4) Describe manufacturing of Direct Black EW with diagram.
 - (5) Explain classification of polymer in detail.
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