



JA-003-001646

Seat No. _____

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

August - 2019

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 labelled diagrams 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) Give full form of EBT.
 - (2) $A \rightarrow Z \leftarrow A'$ is a type of bis azo dye. True/False?
 - (3) Give one example of mono azo reactive dye.
 - (4) Inert gases can be used as mobile phase in chromatography. True/False?
 - (5) Sulfonation of naphthalene at low temperature gives _____
 - (6) T.L.C. stands for what?
 - (7) Chromates are added in cooling water for corrosion control. True/False?
 - (8) Give full form of NW acid.
 - (9) Oxidation of anthracene gives _____ product.
 - (10) At which temperature chlorination of xylene takes place?
 - (11) Give examples of alternating copolymer.
 - (12) Bis (4-isocyanatophenyl) methane can be used for synthesis of _____

- (13) Give raw materials for manufacturing of ABS polymer.
- (14) _____ is commonly called Buna-S.
- (15) "Melamine formaldehyde is thermosetting polymer" - is this statement true or false?
- (16) _____ is functional group in polyester.
- (17) _____ is functional group in polyamide.
- (18) _____ is full form of UHDPE.
- (19) "A polymer floats on water; its density is greater than $1g/cm^3$ " True or False?
- (20) Give any three general solvents for polymer.

2 (A) Answer Any Three : 6

- (1) What is membrane osmometry?
- (2) Define : (a) Polymer (b) Monomer
- (3) Explain homopolymer and copolymer in detail.
- (4) Give synthesis of Butter Yellow.
- (5) Give synthesis of Bromamine acid.
- (6) Write synthesis of Schaeffer's acid.

(B) Answer Any Three : 9

- (1) Write a short note on paper chromatography.
- (2) Give synthesis of Congo Red.
- (3) Give synthesis of Bismark Brown.
- (4) Explain manufacturing of polyurethane in detail with reaction scheme.
- (5) Explain manufacturing of ABS in detail with reaction scheme.
- (6) Explain NMR spectroscopy for analysis of monomer and polymer sample.

(C) Answer Any Two : 10

- (1) Write a detailed note on classification of chromatographic techniques.
- (2) Explain synthesis of H-acid with diagram.
- (3) Explain cationic mechanism for addition polymerization of Ethylene.
- (4) Explain anionic mechanism for addition polymerization of styrene.
- (5) Explain SBR and its types in detail.

- 3 (A) Answer Any **Three** : **6**
- (1) What is weight average molecular weight?
 - (2) Enlist methods for measurement of polymer weight.
 - (3) Explain X-ray diffraction method for characterization of polymer.
 - (4) Give synthesis of o-nitroanisole from o-nitro chlorobenzene.
 - (5) Give synthesis of Chicago acid.
 - (6) Write a short note on determination of β -naphthol.
- (B) Answer Any **Three** : **9**
- (1) Write a short note on estimation of nitro, nitroso and azo group with example.
 - (2) Give the synthesis of Metanil yellow.
 - (3) Give synthesis of p-nitro aniline from aniline.
 - (4) Write a detailed note on urea formaldehyde with mechanism.
 - (5) Explain manufacturing of epoxy resin in detail with reaction scheme.
 - (6) Write a detailed note on nylon,6-6 with mechanism.
- (C) Answer Any **Two** : **10**
- (1) Explain determination of chloride by silver nitrite method and fluoride SPADNS method.
 - (2) Discuss sulfonation of Anthraquinone in detail.
 - (3) Give detailed manufacturing of Direct Black EW with diagram.
 - (4) Explain free radical mechanism for addition polymerization of propylene.
 - (5) Explain classification of polymer in detail
-