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PF-003-001646 Seat No. _____

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

July - 2018

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 and Figures to the right indicate maximum marks.

(2) Draw labeled diagram wherever necessary and assume suitable data.

(3) Question-1 each question carries 1 marks objective type question.

(4) Question-2 & and carries 25 marks each.

1 Answer for the following questions : **20**

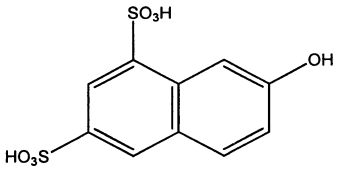
(1) In sub-classes of azo dyes M stands for ?

(2) In chromatographic analysis HPLC means _____

(3) Give IUPAC name of H-acid.

(4) Give one example of acid azo dye.

(5) Give the name of following compound.



(6) In the estimation of fluoride by SPADNS method _____ metal is useful.

(7) Give one type of bis azo dye.

(8) Which of the following is known as the heart of chromatographic system?

(9) $E \leftarrow D \rightarrow Z \leftarrow A$ is an example of which category of dye ?

(10) Define : R_f value

(11) Polymer which possess RCOOR' group is called _____.

(12) Give any three examples of synthetic polymer.

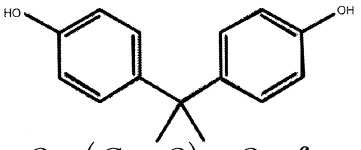
(13) For linear polymers functionality of monomer should be _____.

(14) Heterolytic bond dissociation takes place in _____ mechanisms of addition polymerization.

(15) Give equation for Number average molar mass or Mn.

(16) Write full form of FPO, VPO and MO

(17) Give full name of NMR technology used for characterization of polymers.

(18) 

Give name of this monomer.

(19) $-O-(C=O)-O-$ functional group is present in _____ polymer.

(20) Give any one example of catalyst used in polymerization process.

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

(1) Give synthesis of : Butter yellow.

(2) Explain in brief : Direct determination of Amine.

(3) Give synthesis of : Bromamine acid.

(4) Write any five advantages of using polymer.

(5) Define : (a) Monomer, (b) Polymer

(6) Give any two examples of aromatic cross-linked copolymer.

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

(1) Explain : manufacturing of Chlorobenzene.

(2) Give synthesis of brilliant yellow.

(3) Explain : Determination of chloride by silver nitrate method.

(4) Explain functionality concept in polymers in detail.

(5) Explain in brief x-ray diffraction and IR spectrometry techniques for characterization of polymer.

(6) Give short note on number average molecular weight with equations.

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

(1) Discuss : Lunge Nitro Meter.

(2) Explain various methods of diazotization.

(3) Give detailed manufacturing of Direct Black EW.

(4) Explain anionic mechanism for addition polymerization of PVC.

(5) Explain free radical mechanism for addition polymerization of polythene.

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

(1) Give synthesis of Congo red.

(2) Give synthesis of Schaeffer's acid.

(3) Explain : Estimation of copper in brief.

(4) Give properties of SBR polymer.

(5) Write structure of monomer for manufacturing of polychloroprene.

(6) Write structure of monomer of natural rubber.

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

(1) Give synthesis of : Naphthol Blue Black 6B.

(2) Explain : EDMUD Knecht reduction method.

(3) Give two synthesis of Anthraquinone.

(4) Write in detail : Polyurethane, its reaction scheme, properties and uses.

(5) Give mechanism for manufacturing of nylon, 6-8.

(6) Explain in detail: Urea-formaldehyde Resin, its reaction scheme, properties and uses.

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

(1) Discuss manufacturing of H-acid with flow diagram.

(2) Describe : Thin Layer Chromatography.

(3) Explain mechanism for manufacturing of melamine formaldehyde resin.

(4) Explain mechanism for manufacturing of phenol formaldehyde resin.

(5) Explain in detail : Ethylene-Propylene co-polymer.
