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P-003-001646

Seat No. _____

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

March / April - 2020

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.

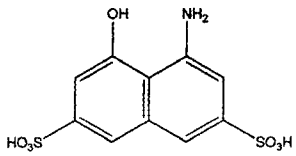
(3) Draw labeled diagram wherever necessary.

(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) 

is also known as _____.

(2) The heart of the chromatographic system is its column. 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) Give full form of TLC.

(7) Chromates are added in cooling water for _____ control.

(8) Indigo is an example of _____ dye.

(9) Oxidation of anthracene gives _____ product.

(10) 6-Amino-l-naphthol-3-sulphonic acid is also known as _____ acid.

(11) Disproportion is a type of _____ in addition polymerization.

(12) Bis (4-isocaynatophenyl)methane can be used for synthesis of _____.

(13) PF resin is polyamide in nature. True/False.

(14) SBR is stands for what?

(15) Bakelite is also known as _____ resin.

(16) _____ is functional group in polyester.

(17) Cellulose is an example of _____ polymer. (Natural/ Synthetic)

(18) Write full form of HDPE.

(19) Isoprene is _____ rubber.

(20) Novolac is a polymer which can be manufactured by _____ & _____

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

(1) Write only components of Ziegler Natta catalyst.

(2) Explain repeating unit in Brief.

(3) Write synthesis of Schaeffer's acid.

(4) Explain homopolymer and copolymer in detail.

(5) Explain in brief: Indirect determination of amine.

(6) Give the synthesis of p-Nitro aniline from aniline

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

(1) Explain preparation of Tartrazine.

(2) Give the synthesis of Rosanthrene O.

(3) Give synthesis of Bismark Brown.

(4) Explain production of polyurethane in detail with reaction scheme.

(5) Discuss X-Ray Diffraction method for determination of degree of crystallinity.

(6) Explain elastomer and give structures of isomers of polyisoprene.

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

(1) Explain various methods of diazotization in detail.

(2) Write a detailed note on classification of chromatographic technique.

(3) Explain synthesis of H-acid with diagram.

(4) Explain glass transition temperature of polymer in detail.

(5) Explain anionic mechanism for addition polymerization of styrene.

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

(1) What is number average molecular weight?

(2) Explain Cross-linking in Polymer.

(3) Explain X-ray diffraction method for characterization of polymer.

(4) Give the synthesis of Butter yellow from Aniline.

(5) Give synthesis of o-nitroanisole from o-nitro chlorobenzene.

(6) Write a short note on determination of β – naphthol.

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

(1) Give synthesis of Koch acid.

(2) Explain determination of α – Naphthol.

(3) Discuss estimation of nitro, nitroso and azo group with example.

(4) Give any four name of addition polymer with their monomer structures.

(5) Explain production of epoxy resin in detail with reaction scheme.

(6) Give any four name of addition polymer with their monomer structures.

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

(1) Explain Lunge nitro meter in detail.

(2) Discuss TLC in detail.

(3) Give detailed manufacturing of Direct Black EW with diagram.

(4) Explain free radical mechanism for addition polymerization of propylene.

(5) Explain manufacturing of phenol-formaldehyde polymer in detail.
