

M.Sc. Semester-III, Examination,
Organic Chemistry, Paper IX, Industrial Chemistry, Subject Code: 3487

Time: 2.5 hrs]

[Marks: 70

N.B. (i) Attempt all questions.

(ii) All questions carry equal marks

Q.1. (a) Define and give illustrations of filler, plasticizer and anti-oxidant with respect to polymer chemistry. 5

(b) Give the type of phenol formaldehyde resins and describe the manufacture of phenol formaldehyde resins. 9

OR

Q.1. (a) Explain the mechanism of anionic addition polymerization. 5

(b) What is elastomer (rubber)? Describe the manufacture of styrene butadiene rubber (SBR). 9

Q.2. Discuss in brief information of aromatic petrochemicals with occurrence and definition. Explain industrial manufacturing of phenol, styrene and maleic anhydride from benzene. 14

OR

Q.2. Discuss the manufacture of any three important members of C_3 cut of petroleum. 14

Q.3. Answer the following: 14

(a) Introduce the term nitration unit process. Enlist the various type nitrating reagents used in the nitration unit process. Give the nitration of nitro-paraffins. Give the conversion: m-toluidine from p-amino toluene.

(b) Define: Sulphonation. Enlist the different reagents used for sulphonation process. Give the sulphonation of anthraquinone in different conditions.

OR

Q.3. Answer the following: 14

(a) Give the mechanism of amination and nitration processes.

(b) Define: Halogenation as unit process. Discuss in detail halogenation process in organic industries.

Q.4 Answer the following: 14

(a) Explain the role of: (i) Fixative (ii) Vehicle (iii) Solvent in perfumery industries.

(b) Give the synthesis of: (i) Abate (ii) DDT (iii) DDT (d) Parathion

OR

Q.4 Answer the following: 14

(a) Explain the classification of insecticides based on their mode of action. Give any four advantages associated with organo-phosphorous insecticides.

(b) Give synthesis and uses of: (i) Musk ambrette (ii) Vanillin (c) β -ionone

Q.5. (a) Answer the following: 7

(i) Which inventions are patentable and which inventions are not patentable in India? Give brief account on it.

(ii) Give brief account on Trademark. Explain the trade marks which are not eligible for registration.

(b) Explain Kraft process for making pulp from wood. 7

OR

Q.5. (a) Answer the following: 7

(i) Describe the term "Patent Cooperation Treaty (PCT)" and draw the direct PCT filing chart.

(ii) What is copyright and describe that what can be covered by copyrights?

(b) Give the schematic diagram and explain various steps involved in manufacture of starch from maize. 7