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OCS 554

**IV Semester M.Sc. Degree Examination, September/October 2022
(CBCS : 2016 – 17 Syllabus)
(Freshers and Repeaters)
ORGANIC CHEMISTRY**

Synthetic Polymers, Dyes and Pesticides

Time : 3 Hours

Max. Marks : 70

PART – A

Answer **all** the following sub-divisions.

(9×2=18)

1. a) Outline the preparation of resole and novolac resins.
- b) What are cationic initiators ? How are they useful for polymerization reactions ?
- c) Give the composition of Zeigler-Natta catalyst. Mention its use in polymerisation.
- d) Write the structure of phenolphthalein. Why it is used as an indicator in volumetry ?
- e) What are reactive dyes ? Write their characteristics.
- f) Write the structure of Methyl orange and Bismark brown.
- g) Write the environmental impact of halogenated insecticides using an example.
- h) Give classification of insect pheromones giving suitable examples.
- i) What are fumigants ? Give any two examples and their applications.

PART – B

Answer **any four full** questions.

(4×13=52)

2. a) Explain the various factors affecting glass transition temperature of polymers by taking suitable examples.
- b) Classify polymers based on their applications giving suitable examples for each type.
- c) Describe the method of preparation, properties and applications of acrylic polymers.

(3+5+5)

P.T.O.



3.
 - a) Distinguish the features between addition and condensation polymerization reactions.
 - b) Describe the preparation and structure of synthetic rubber. Why does it possess superior properties over natural rubber ?
 - c) Write a note on preparation, properties and applications of PVC and epoxy polymers. **(3+5+5)**
 4.
 - a) Explain various methods used for applying dyes to fabrics.
 - b) Provide the synthetic scheme for Orange-II and Congo red dye.
 - c) Describe modern theory of colour giving suitable examples. **(3+5+5)**
 5.
 - a) Give an account on pigments, write the structure and properties of Lake red pigment.
 - b) Write the structure and synthesis of Rosaniline and Quinaldine.
 - c) Explain the synthesis and applications of Tinopal and Blankophor. **(3+5+5)**
 6.
 - a) Explain the classification of insecticides giving suitable examples.
 - b) Describe the synthesis and mode of action of chlordane and parathion.
 - c) Write the synthesis of disparlure and bomykol. **(3+5+5)**
 7.
 - a) Differentiate natural and synthetic insecticides using suitable examples.
 - b) Give an account of synthesis and application of sulphonyl ureas and sulphonamide based herbicides.
 - c) Give an overview of systemic fungicides and its types using examples. **(3+5+5)**
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