This question paper contains **3** printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : **5700**

Unique Paper Code : **2173012014**

Name of the Paper : **DSE : Applied Organic Chemistry**

Name of the Course : **B.Sc. (Hons.) Chemistry**

Semester : **IV**

Duration : **3 Hours** Maximum Marks : **90**

(Write your Roll No. on the top immediately on receipt of this question paper.)

All questions carry equal marks.

There are eight questions in all.

Attempt any *six* questions.

Calculator is allowed.

Each question carries **15** marks.

1. (*i*) Write the synthesis and uses of Paracetamol.

(*ii*) What are analgesics ? Give *one* example with synthesis and uses.

(*iii*) What are antibiotics ? Write any *one* with synthesis and mode of action. 3×5

2. (*i*) Describe the mechanism of free radical polymerization with suitable examples.

P.T.O.

(*ii*) Explain the synthesis, structure and uses of Bakelite.

(*iii*) Discuss the concept of chromophores and auxochromes with examples of dyes. 3×5

3. (*i*) Differentiate between plastics, resins and fibers, with examples.

(*ii*) Write a short note on the classification of dyes based on their applications.

(*iii*) What are conducting polymers ? Give *two* examples and their applications. 3×5

4. (*i*) Describe the methods of polymerization in detail.

(*ii*) What are biodegradable polymers ? Explain with examples.

(*iii*) What are azo dyes ? Write the structure of Methyl Orange. 3×5

5. (*i*) Explain the theory of color and constitution of dyes.

(*ii*) Describe the synthesis and applications of Malachite Green.

(*iii*) Why alkaline solution of Phenolphthalein gives pink colour, however in excess of alkali it gives colorless solution. 3×5

6. (*i*) What are synthetic dyes ? How do they differ from natural dyes ? Explain with examples.

(*ii*) Describe the environmental impact of synthetic dyes and measures for sustainable dyeing.

(*iii*) Describe the synthesis and applications of Congo Red. 3×5

7. (*i*) What is the significance of glass transition temperature (Tg) in polymers ? What experimental techniques are used to determine Tg ?

(*ii*) Write a short note on Di-block and amphiphilic polymers.

(*iii*) What are the techniques used to determine the molecular weight of polymers ? 3×5

8. (*i*) Write a short note on steroids with examples mentioning its structure and biological functions.

(*ii*) What are terpenes ? Write *one* example with its synthesis and application.

(*iii*) What are alkaloids ? Write synthesis and mode of action of Nicotine. 3×5