

SL No of QP	:	5886
Unique Paper Code	:	2173522011
Name of the Paper	:	DSE: Chemistry of Polymers, Dyes and Natural Products
Name of the Course	:	Bachelor of Science (Life Science with Chemistry)
Semester	:	4 / 6
Duration	:	2 hrs
Maximum Marks	:	60

Instruction for the candidates

1. Write your Roll no on the top immediately on the receipt of the question paper.
2. All questions carry equal marks. There are six questions in all. *Attempt any four questions.*

1. (i) Define glass transition temperature. Explain the factors on which it depends.
(ii) Write chemical reactions involved in the benzoyl peroxide-initiated polymerization of vinyl chloride (initiation, propagation, termination by combination, by disproportionation and by chain transfer).
(iii) Write a short note on conducting polymers and their importance in daily life.
(5, 5, 5)

2. (i) Write the mechanism of Ziegler-Natta polymerization of alkenes.
(ii) Differentiate between:
a. Addition Polymerization & Condensation Polymerization
b. Thermoplastics & Thermosetting polymers
(iii) Define tacticity of a polymer. Classify polymers on the basis of tacticity (giving characteristic features with one example of each).
(5, 5, 5)

3. (i) Write short notes on:
a. Di-block polymer
b. Amphiphilic polymer
(ii) What are edible dyes? Classify them giving examples. Discuss the effect of synthetic food colors on health
(iii) Write short notes on the following (Any two):
a. Singeing
b. Scouring
c. Mercerizing
(5, 5, 5)

4. (i) What are Alkaloids? Enlist the uses of Alkaloids.

(ii) Write a note on "Emde's method" of structural elucidation of Alkaloids.

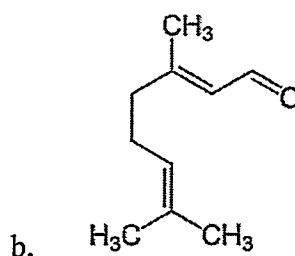
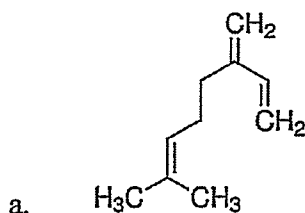
(iii) Describe the synthesis and physiological action of nicotine.

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5. (i) What are Terpenoids? Give its classification based on number of isoprene units.

(ii) Calculate the number of isoprene units in:



(iii) Write the reactions involved in synthesis of Citral. Enlist two industrial applications of Citral.

(5, 5, 5)

6. (i) Differentiate between the following:

a. Linear and cross-linked polymer

b. Homopolymer and copolymer

(ii) Define the terms plastics, elastomers and fibres.

(iii) Discuss in detail the structure elucidation and synthesis of Indigotin.

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