

(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2021 ONLY)

(NO. OF PAGES: 2)

SUB CODE **21UCY614**

REG.NO. :

N.G.M. COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY-2024

B.Sc CHEMISTRY

MAXIMUM MARKS: 70

SEMESTER VI

TIME : 3 HOURS

**PART – III
POLYMER CHEMISTRY**

SECTION - A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.(K1)

- Which of the following is a thermosetting polymer?
a) polystyrene b) polyolefins c) nylons d) phenolic resins
- Which of the following monomers are unsuitable for condensation polymerization?
a) propanoic acid and ethanol b) butane-dioic acid and glycol
c) diamines and dicarboxylic acids d) hydroxy acids
- Which among the following polymers have lowest solubility?
a) polyethylene b) polystyrene c) nylon 6 d) epoxy resin
- Molecular crystals are generally _____
a) Hard b)Soft c)Unstable d)Stable
- Which of the following is the most widely used polymerization technique to produce polyvinyl acetate?
a) emulsion polymerization b) suspension polymerization
c) solution polymerization d) all of the mentioned

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

- Addition of different types of monomers to form polymer chains is known as what?
- The polymer in which steric placements of the substituent are arranged in such a way to give alternate d and l configurations, is known as what?
- What is the range of tensile strength, exhibited by fibres?
- Which of the following kind of polymers are known for their high crystallinity?
- Which polymerization mechanism can polymerize the styrene monomer?

(CONTD 2)

SECTION – B**(5 X 4 = 20 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K3)**

11. a) Classify the types of Polymers.
(OR)
b) Explain Spongy rubber.
12. a) Differentiate between addition polymerization and condensation polymerization.
(OR)
b) Compile a note on Co-polymerization.
13. a) Discuss the Ziegler Natta catalysts.
(OR)
b) Make a note on Polymer additives.
14. a) Compile the molecular weight of polymers.
(OR)
b) List and explain the polymer identification methods.
15. a) Build the preparations of Nylon-6 and Phenol formaldehyde resins.
(OR)
b) Point out the importance of biopolymers.

SECTION - C**(4 X 10 = 40 MARKS)****ANSWER ANY FOUR OUT OF SIX QUESTIONS****(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS
(FROM Qn. No : 17 to 21) (K4 /K5)**

16. Describe any two polymer processing techniques.
17. Elaborate the polymerization techniques.
18. Construct the step growth polymerization with suitable example.
19. Summarize the Factors affecting glass transition temperature polymers.
20. Criticize the following methods
(i)Osmometry method (ii)Light scattering method
21. Construct the preparation and uses of polyethylene, PVC and polystyrene.

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