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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2020-21 ONLY)

SUBJECT CODE 20 UCY 614

REG.NO.

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

END-OF-SEMESTER EXAMINATIONS : MAY - 2023

B.Sc. – CHEMISTRY **MAXIMUM MARKS: 70**

VI SEMESTER **TIME : 3 HOURS**

PART – III
POLYMER CHEMISTRY
SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

MULTIPLE CHOICE QUESTIONS. (K1)

1. Wool and silk are the examples of _____.

   a) animal fibres b) plant fibres c) mineral fibres d) synthetic fibres

2. On the basis of mode of formation polymers can be classified as _____.

   a) addition polymers only b) condensation polymers only

   c) copolymers d) addition and condensation polymers

3. Chain-end degradation is also known as _____.

   a) zip polymerization c) deploymerization

   b) random degradation d) propagation

4. Molecular mass of polymers are expressed as _____.

   a) median b) average c) mode d) percentage

5. Which technique is used to produce polymeric things from thermosetting materials?

   a) calendaring b) foaming c) film casting d)compression moulding

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

6. Define polymerization.

7. What is the role of peroxides in addition polymerization?

8. What is Ziegler-Natta catalyst?

9. Write the expression of viscosity-average molecular weight.

10. Sketch the polymerization reaction of polyethylene.

(CONTD……..2)

ETHICAL PAPER

SECTION – B (5 X 4 = 20 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(Qn. No. 11 to 15)10 questions (a & b) – 2 questions from each unit. (K3)

11. a) Differentiate thermoplastics and thermosetting plastics with suitable example.

(OR)

b) Justify suspension polymerization.

12. a) Give an account of cationic polymerization.

(OR)

b) Show the schematic representation of alternating and graft copolymers.

13. a) What are atactic and syndiotactic polymers?

(OR)

b) Write short notes on photo degradation.

14. a) Explain the Molecular Weight concept of polymers..

(OR)

b) How will you determine average molecular weight by Ebulliometry method?

15. a) Describe film casting technique.

(OR)

b) List the importance of biopolymers in day today life.

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 (Or) K5)

16. Discuss the preparation and uses of nylon-6,6 and PVC.

17. Explain the following (5+5)

(i) Difference between natural and synthetic rubber (ii) Emulsion polymerization

18. Illustrate the mechanism of free radical polymerization.

19. Define Tg. Discuss the factors influencing glass transition temperature.

20. Discuss GPC method for molecular weight distribution.

21. Analyze the preparation and uses of phenol formaldehyde resins.