(6 pages) Reg. No. : .....

Code No. : 30493 E **Sub. Code : CECH 51**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Fifth Semester

Chemistry — Major Elective

POLYMER CHEMISTRY

(For those who joined in July 2021-2022 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Teflon and neoprene are examples of ————

(a) Co polymer

(b) Monomer

(c) Homopolymer

(d) Condensation polymer

2. (i) A-A-A-A (ii) A-B-B-A-A-A-A-B-A means of ————.

(a) homo polymer, copolymer

(b) natural polymer, synthetic polymer

(c) liner polymer, branched polymer

(d) fibre, elastomer

3. The monomer can't be polymerized thro addition polymerisation

(a) Ethylene glycol (b) Ethylene

(c) Propylene (d) Vinyl chloride

4. In co-ordination polymerization, the catalyst used is

(a) Zn/HCl

(b) Na/Hg

(c) Zeigler Natta catalyst

(d) None of these

5. Which of the following is a inorganic polymer?

(a) Starch (b) PTFE

(c) Silicones (d) Neoprene

6. Which of the following is a poly amide?

(a) Teflon (b) Nylon 6,6

(c) Terrylene (d) Bakelite

7. Method used to produce articles from thermosetting plastic is

(a) Compression moulding

(b) Calendaring

(c) Rotational casting

(d) Blow moulding

8. Benzoyl peroxides used as ———— in plastic formation.

(a) Catalyst (b) Filler

(c) Dye (d) Pigment

9. Chondroitin sulphate is a component of

(a) artificial heart (b) artificial kidney

(c) artificial skin (d) dental polymer

10. Superier contact lens in

(a) Hard lens (b) Gas permeable lens

(c) Soft lens (d) Silicone lens

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) How are polymers classified? Give examples.

Or

(b) Write short notes on block and graft copolymer.

12. (a) State the differences between addition and condensation polymerisation.

Or

(b) Explain co-ordination polymerization.

13. (a) How is bakelite prepared? Give its uses.

Or

(b) Write a note on Rayon.

14. (a) Write a note on blow moulding.

Or

(b) Explain about injection moulding.

15. (a) Write a note on the following :

(i) Saliton

(ii) Polaron.

Or

(b) Write a note on dental polymers.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Explain tacticity in polymers.

Or

(b) What is meant by glass transition temperature? Briefly discuss the various factors which effect the glass transition temperature.

17. (a) Explain the following :

(i) Emulsion polymerisation

(ii) Suspension ploymerisation.

Or

(b) Write a note on the following :

(i) Cationic polymerisation

(ii) Anionic polymerisation.

18. (a) Give the preparation and uses of Buna-S and Buna-N rubber.

Or

(b) Write a note on the following :

(i) Batyl rubber

(ii) Nitrile rubber.

19. (a) Explain the following in polymer processing

(i) Additives

(ii) Plasticizers.

Or

(b) Write a note on :

(i) Photo degradation

(ii) Thermal degradation.

20. (a) Explain :

(i) Chemical recycling

(ii) Polymers used in artificial heart.

Or

(b) Write a note on conducting polymers.

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