

(6 pages)

Reg. No. : .....

Code No. : 10022 E Sub. Code : SECH 5 A/  
AECH 51

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Chemistry

Major Elective — POLYMER CHEMISTRY

(For those who joined in July 2017–2020)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Monomers are converted to polymer by
- Condensation reaction between monomers
  - Hydrolysis of monomers
  - Protonation of monomers
  - None of these

2. In co-ordination polymerisation the catalyst used is

- Zn/HCl
- Na/Hg
- Ziegler Natta catalyst
- None of these

3. Tg is evaluating the

- Flexibility of a polymer
- Response on mechanical stress
- Plastic at particular temperature
- All the above

4. Which one of the following is not true

- $M_w > M_n$
- $M_w < M_n$
- Viscosity of the polymers is more than solvent
- Both (a) and (c)

5. Method used to produce articles from thermo setting plastics is  
(a) Compression moulding  
(b) Calendaring  
(c) Rotational casting  
(d) Blow moulding
6. The technique used to make hollow article  
(a) Calendaring (b) Injection moulding  
(c) Blow moulding (d) Film casting
7. Which of the following is a polyamide?  
(a) Teflon (b) Nylon 6, 6  
(c) Terrylene (d) Bakelite
8. Which one of the following is thermosetting plastic?  
(a) Bakelite (b) PVC  
(c) Teflon (d) PET
9. Which one of the following is a conducting polymer?  
(a) Polyaniline (b) PVC  
(c) PET (d) PMMA
10. Which one of the following is a inorganic polymer?  
(a) Starch (b) Cellulose  
(c) Silicones (d) Reyan

Page 3 Code No. : 10022 E

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 based on origin?  
Or  
(b) Write a note on Bulk polymerisation.
12. (a) Write notes on molecular weight of polymers.  
Or  
(b) Write a note on glass transition temperature.
13. (a) Write a note on calendaring.  
Or  
(b) Explain blow moulding.
14. (a) Differentiate thermoplastic and thermosetting resins.  
Or  
(b) Give the preparation and properties of polystyrene.
15. (a) Write a note on biopolymers.  
Or  
(b) Write a note on silicones.

Page 4 Code No. : 10022 E

[P.T.O.]

PART C — (5 × 8 = 40 marks)

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

16. (a) Discuss in detail about co-ordination polymerisation.

Or

- (b) Write a note on (i) addition polymerisation  
(ii) condensation polymerisation.

17. (a) Write a note on polymer degradation.

Or

- (b) Write a note on (i) degree of polymerisation  
(ii) vulcanisation.

18. (a) Write a note on emulsion polymerisation.

Or

- (b) Explain the following (i) compression moulding  
(ii) die casting.

19. (a) Explain the preparation and properties of thermo setting plastics.

Or

- (b) Give the preparation, properties and uses of the following (i) Nylon 66 (ii) PVC.

Page 5 Code No. : 10022 E

20. (a) Write a detail about high temperature and fire resistant polymers.

Or

- (b) Write a note on conducting polymers.

Page 6 Code No. : 10022 E