

--	--	--	--	--	--	--	--	--	--



**DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)**

(For Candidates admitted from 2018-2019 onwards)



UG DEGREE EXAMINATIONS APRIL - 2021

B.Sc., - CHEMISTRY

POLYMER CHEMISTRY

Time: 3 Hrs

Max.Marks: 75

PART - A

CHOOSE THE CORRECT ANSWER

(10X1=10)

- In a polymer, the repeating units are called _____.
a) Molecules b) Atom c) Monomers d) compounds
- Epoxy resins are example of _____.
a) Elastomers b) Liquid resin c) Thermosetting polymer d) Thermoplastic
- If the intermolecular hydrogen bonding is present between the polymer chains, restrict the rotations which _____ the Tg.
a) Decreases b) Increases c) No change d) Independent
- Which of the following is Thermal degradation?
a) Hydrogenation b) Pyrolysis c) Both a and b d) None
- Injection molding machine is similar to _____.
a) Thermoforming b) Compression c) Extruder d) Blow molding
- Hydraulic pressure is used in _____ molding of polymer.
a) Injection b) Blow c) Compression d) Extruder
- Kevlar is made of _____.
a) Polyparaphenylene Terephthalamide b) Polyparaphenylene Terephthalide
c) Polymetaphenylene Terephthalamide d) Polymetaphenylene Terephthalide
- Teflon is _____.
a) Polytetrafluoroethylene b) Polytetrafluoroethane
c) Polytetrachloroethylene d) Polytetrabromoethylene
- Diameter of carbon fibres are _____.
a) 2 – 3 μm b) 3 – 8 μm c) 5 – 10 μm d) 10 – 15 μm
- Conducting polymers are used in _____.
a) OLED b) Mobile displays c) field effect transistor d) All the above

PART - B

ANSWER ALL THE QUESTIONS

(5X7=35)

11. a) Differentiate between thermosetting plastics and thermoplastics.

(OR)

b) Write a short note on vulcanization of rubber.

12. a) Mention the factors affecting the glass transition temperature (T_g).

(OR)

b) Write a short note on polymer degradation.

13. a) How polymers are moulded by injection method?

(OR)

b) Briefly explain the compression moulding of polymers.

14. a) How PVC is prepared? Mention its properties and uses.

(OR)

b) Explain the preparation, properties and importance of Kevlar.

15. a) Mention the importance of polymers in medicinal field.

(OR)

b) Write a short note on silicones.

PART - C

ANSWER ANY THREE QUESTIONS

(3X10=30)

16. Explain the mechanism of the following,

a) Free radical polymerisation

b) Ionic polymerisation

17. Determine the molecular weight of polymer based on number average (M_n) and weight average (M_w).

18. Explain the fabrication of polymers and their moulding techniques in detail.

19. Illustrate the mechanistic synthesis of styrene and neoprene rubbers. Mention their uses.

20. Discuss the role of biopolymers in medicinal field.