

M.Sc. Sem.-3 Examination

503

Polymer Science

November-2025

Time : 2-30 Hours]

[Max. Marks : 70

QUESTION – 1 Write the Followings

- (i) Describe in detail the Phenolic adhesives with its industrial applications. **7 Marks**
- (ii) Explain in detail the importance of wetting and solidification term for adhesives. **7 Marks**

OR

- (i) Define the forces and mechanism of adhesion for adhesives. **7 Marks**
- (ii) Define Adsorption and Interlocking theory for adhesion in detail. **7 Marks**

QUESTION – 2 Write the Followings

- (i) Describe the coating selection criteria in details. **7 Marks**
- (ii) Describe the surface preparation of substrate for adhesives and its significance. **7 Marks**

OR

- (i) Explain the effect of pressure and temperature on the bond strength of adhesives. **7 Marks**
- (ii) What are Pigments? Give the classification and factor affecting the dispersion of pigments. **7 Marks**

QUESTION – 3 Write the Followings

- (i) Explain the compatibility of adhesive to adherent and its factors affecting the compatibility. **7 Marks**
- (ii) Give the Basic Paint components with examples. **7 Marks**

OR

- (i) What are pressure sensitive adhesives? Explain the details. **7 Marks**
- (ii) Define the different types of Stresses applied in adhesive bonding. **7 Marks**

QUESTION – 4 Write the Followings

- (i) Starting from raw materials, describe the manufacture and properties of varnishes. **7 Marks**
- (ii) What are polyurethanes and give the reason to prefer them for adhesive.? **7 Marks**

OR

- (i) Explain the Cyanoacrylate adhesive with its manufacturing and uses. **7 Marks**
- (ii) Explain the Joint designs with its type and selection criteria in adhesive bonding. **7 Marks**

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QUESTION – 5 Attempt any Seven out of Twelve

14 Marks

1. Explain the functions of adhesives.
2. Why Choose RTV silicone sealants over adhesives.?
3. Give the significance of anaerobic adhesives.
4. What are the Extenders for coating also give examples?
5. Describe the interfacial bonding.
6. Give the types of curing agents for Epoxy Resin based adhesives.
7. Define the significance of testing for adhesives.
8. Explain the role of fillers in adhesives.
9. Give the Adhesive Curing Mechanism.
10. What are acrylic Paints.
11. Explain the factors affecting the coating properties.
12. What are the industrial for urethane adhesives.

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