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**SARDAR PATEL UNIVERSITY**  
**B.Sc. Industrial Chemistry**  
**(Semester -VI ) EXAMINATION**  
**Course No. : US06CICH03**  
**(Polymer Technology)**

Date: 25/6/2022

Time:10.00 am to 12.00pm  
[10]

Total Marks: 70

**Q.1 Multiple Choice Questions**

- 1 Cellulose is a ..... polymer.  
 a) Natural                      b) Semi synthetic                      c) Synthetic                      d) Plastic.
- 2 Bakelite is a copolymer of \_\_\_\_\_  
 a) Urea & Formaldehyde                      c) Malemine & Formaldehyde  
 b) Phenol & Formaldehyde                      d) Ester
- 3 Urea formaldehyde resin is an example of \_\_\_\_\_  
 a) Thermosetting                      b) Thermoplastic                      c) Thermoelastic                      d) Thermit
- 4 Flexible Foam are usually made up of \_\_\_\_\_  
 a) PVC                      b) Polyurethane                      c) Polyamide                      d) Silicon Rubber
- 5 Functionality of Melamine is \_\_\_\_\_  
 a) One                      b) Two                      c) Three                      d) Five
- 6 PVC is a \_\_\_\_\_ type of polymer.  
 a) Thermoplastic                      c) Rubber  
 b) Thermoset Plastic                      d) None of these
- 7 Which of the following polymer contains nitrogen?  
 a) PVC                      c) Nylon  
 b) PVA                      d) Resol
- 8 \_\_\_\_\_ is the homopolymer of caprolactum.  
 a) Nylon 6                      b) Nylon 66                      c) Nylon 10                      d) Nylon 12
- 9 Natural rubber is made by polymerizing \_\_\_\_\_  
 a) Styrene                      c) Isoprene  
 b) Nylon-66                      d) Propene
- 10 In vulcanization of polybutadiene \_\_\_\_\_ is used as a vulcanizing agent.  
 a) Sulphur                      b) Oxygen                      c) Quinone                      d) Nitrogen

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**Q.2 True or False**

- 1 Peroxides are also known as initiators.
- 2 A Stereo Regular polymer have uniform orientation of molecules.
- 3 The reaction between the epichlorohydrin and Bis-phenol A gives Epoxy resin.
- 4 Polyethylene was synthesized by Ziglar Natta in 1933.
- 5 Polyvinyl fluoride is also known as PVC.
- 6 LDPE have density ranging from 0.94-0.96 gm/cc.
- 7 Orlon is made by polymerizing vinyl cyanide.
- 8 Alum solution may be used as the coagulant to give SBR.

**Q.3 Short Questions (Attempt any 10 out of 12)**

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- 1 Write the difference between Initiator & Inhibitor
- 2 Differentiate Elastomers & Plastomers.
- 3 What is polycondensation? Explain with simple example.
- 4 List different methods used for the preparation of formaldehyde.
- 5 What is polyol? Discuss about types of polyols?
- 6 Discuss how the isocyanates are prepared by phosgenation process.
- 7 Write the properties of Polystyrene.
- 8 Discuss the applications of Polycarbonates.
- 9 Write in brief about high density polyethylene (HDPE).
- 10 Name five Synthetic fibers.
- 11 Give the name of different natural fibre .Also write its uses.
- 12 Draw the structure of Polyisoprene and Polychloroprene.

**Q.4 Long Questions (Attempt Any Four)**

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- 1 Discuss about any two Polymerization Techniques.
- 2 Write classification of polymers based on molecular arrangement & tacticity.
- 3 Discuss manufacturing of urea formaldehyde resin.
- 4 Explain manufacturing of LDPE by High Pressure process.
- 5 Discuss about Teflon.
- 6 Explain the manufacturing of polypropylene by slurry process.
- 7 Discuss manufacturing of Nylon-66.
- 8 Write about manufacturing process of cellulose nitrate

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