

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019****Subject Code: 2172307****Date: 03/12/2019****Subject Name: FRP Technology and composites****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

- Q.1**
- (a) Which are the advantages of FRP? **03**
 - (b) Explain Hand layup process. List various advantages and limitations of Hand layup process. **04**
 - (c) What are the advantages of Vacuum bag molding process? Explain vacuum bag molding process with neat diagram. **07**
- Q.2**
- (a) Define: Composites, Gelation, Curing **03**
 - (b) Discuss material selection and process selection criteria for designing in FRP. **04**
 - (c) With neat diagram explain Pultrusion process. Which products can be prepared by this process? **07**
- OR**
- (c) Discuss various types of accelerators used for unsaturated polyester resin. **07**
- Q.3**
- (a) List various types and forms of glass fibers used as reinforcement. **03**
 - (b) Explain Plaster mold with neat diagram. **04**
 - (c) With neat flow diagram explain manufacturing of carbon fiber. **07**
- OR**
- Q.3**
- (a) What is the role of Surfacing tissue? Explain. **03**
 - (b) Discuss Aramid fiber along with its advantages. **04**
 - (c) Explain curing reaction of unsaturated polyester resin. **07**
- Q.4**
- (a) Discuss various types of glycols used to prepare unsaturated Polyester resin. **03**
 - (b) Enlist various commercially available polyester resins. Explain role of Gelcoat and topcoat in brief. **04**
 - (c) Explain GRP molds with neat diagram. **07**
- OR**
- Q.4**
- (a) Explain types of catalysts used for unsaturated polyester resin. **03**
 - (b) How Prepreg is prepared? Explain with neat diagram. **04**
 - (c) Resin Transfer molding process along with its advantages. **07**
- Q.5**
- (a) What is the role of monomer in preparation of polyester resin? List various types of monomer used. **03**
 - (b) Explain manufacturing process for glass fibers with neat diagram. **04**
 - (c) With neat diagram explain Sheet molding compound along with its formulation. **07**

OR

- Q.5 (a) What is the function of diluents in epoxy resin? Explain reactive diluents. **03**
- (b) Write about Reduced flammability resins and Low styrene emission polyester resins in brief. **04**
- (c) Which type of products can be manufactured by Filament Winding? Explain process with neat diagram. **07**

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