

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017****Subject Code: 163406****Date: 03/05/2017****Subject Name: Composite Technology****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.

- Q.1** (a) Explain manufacturing of carbon fibres with flow diagram **07**
(b) What is importance of composite in plastics industries? Explain the type of composite with suitable examples. **07**
- Q.2** (a) What is the role of accelerators? Give detail description on various accelerators used in resin system **07**
(b) How epoxy resin is manufactured? Mention its properties and also give its advantage over other thermoset matrices **07**
- OR**
- (b) Write about preparation and curing reaction of Vinyl ester resin **07**
- Q.3** (a) Explain Pultrusion process used for the manufacturing of profiles **07**
(b) Explain vacuum bag and pressure bag moulding with suitable sketches **07**
- OR**
- Q.3** (a) Write about UV stabilizers, flame retardants and toughening agents with examples. **07**
(b) Explain briefly the determination of shelf life and gel time. **07**
- Q.4** (a) Which are the types of glass fibers? List various forms of glass fibers commercially available. Give advantages and disadvantages of glass fibers **07**
(b) Describe SMC and DMC process with neat sketch **07**
- OR**
- Q.4** (a) Discuss Resin transfer molding process along with advantages and applications **07**
(b) Explain manufacturing of Unsaturated polyester resin used as matrix in composites **07**
- Q.5** (a) Give various applications of FRP products in marine and automotive. **07**
(b) Describe ultrasonic testing method for non destructive testing of composites **07**
- OR**
- Q.5** (a) What is the need to conduct non-destructive testing? What are the various methods used for non-destructive testing? Write about any one method **07**
(b) Give various applications of FRP products in the fields of chemicals, railways and electrical and electronic industries **07**
