

Seat No: _____

Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2019-20 Examination

Semester: 3
Subject Code: 203200205
Subject Name: Composite Materials

Date: 28/11 /2019
Time: 10:30am to 01:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Define composite material. Give the detail classification of composite material. **(05)**
B) What are the different types of glass fibers? List the properties of glass fibers. **(05)**
C) Write a short note on stir casting process for fabrication of metal matrix composites. **(05)**

Q.2 Answer the following questions. (Attempt any three) **(15)**

- A) Which are the metals used as a matrix material to produce metal matrix composites? Compare their density and melting point. Why is it easy to use aluminum as a matrix?
- B) Explain the hand layup method for manufacturing of polymer matrix composites.
- C) Write a short note on Rule of mixtures.
- D) Describe stress concentration.

- Q.3** A) List the advantages and limitation of composite material. **(07)**
B) What are the different metallic and ceramic materials used as a particle reinforcement? Explain the role of reinforcement in composite material. **(08)**

OR

- B) Write a short note on maximum stress criteria. **(08)**

- Q.4** A) List various polymeric materials used as a matrix. Explain the role of matrix in composites. **(07)**

OR

- A) Write a short note on manufacturing of Carbon - Carbon composites. **(07)**
B) Write a short note on Filament winding method to manufacture polymer matrix composites. **(08)**