Total No. of Questions – [4]

Total No. of Printed Pages: 01

G.R. No.	

Paper code :- P119-154(T1)

OCTOBER 2019 / INSEM (T1)

F. Y. M. TECH. (DESIGN ENGINEERING) (SEMESTER - I)
COURSE NAME: MECHANICS OF COMPOSITE MATERIALS
COURSE CODE: MEPA11184B
(PATTERN 2018R1)

Time: [1 Hour]

[Max. Marks: 20]

(*) Instructions to candidates:

1) **Answer Q.1 OR Q.2, Q.3 OR Q.4**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitable data where ever required**

Q.1) Explain with neat sketch Resin Transfer Molding process of composite manufacturing. State its advantages, limitations and applications. **[10]**

OR

Q.2) Explain with neat sketch Filament Winding Process of composite manufacturing. State its advantages, limitations and applications. **[10]**

Q.3) (a) Derive the expression for volume fractions of voids. Explain the procedure to determine experimental density of composite laminate. **[6]**

(b) Explain thermoset and thermoplastic polymers. Differentiate between the two. Give examples of both. **[4]**

OR

Q.4) (a) A glass/epoxy specimen weighing 0.98 g was burnt and the weight of the remaining fibers was found to be 0.49 g. Densities of glass and epoxy are 2.4 g/cc and 1.2 g/cc respectively. Determine the density of composite in the absence of voids. If the actual density of the composite was measured to be 1.5 g/cc, what is the void fraction. **[6]**

(b) Obtain the expression for Rule of Mixture (ROM) to determine strength and modulus of composite laminate. **[4]**

.....END.....