Code: **17MEMD1T6B**

I M.Tech - I Semester - Regular Examinations – February 2018

MECHANICS OF COMPOSITE MATERIALS
(MACHINE DESIGN)

Duration: 3 hours   Max. Marks: 60

Answer the following questions.

1. Write short notes on: 15 M
   - i)   Fibre reinforced composites
   - ii)   Particle reinforced composites
   - iii) Whiskers reinforced composites

(OR)

2. Explain with a neat sketch, the filament winding process and mention the methods and its application.   15 M

3. Derive an expression for the Young's modulus of composite in the Transverse direction. State the assumptions in the derivation.   15 M

(OR)

4. State and explain Tsai-Wu theory of failure of a Lamina.
                                                          15 M

5. Explain the basic assumptions in the analysis of laminated composites.   15 M

<div align="center">(OR)</div>

6. Explain the force and moment resultants of a laminate.   15 M

7. Explain inter laminar stresses and edge effects in laminated composites.   15 M

<div align="center">(OR)</div>

8. Elaborate the possible failure modes of the composite materials and explain any one method with neat sketch.

<div align="right">15 M</div>