

Sub Code:MOET-395

ROLL NO.....

SEMESTER EXAMINATION, 2022-23 YEAR

Programme – II year M.Tech – STRUCTURE ENGEERING

**COMPOSITE
MATERIALS**

Duration : 3:00 hrs

Max Marks: 100

Note:-Attempt all questions. All Question carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption mad in the answer.

Q 1. Answer any four parts of the following.

- a) What are composites explain.
- b) List and explain any five limitations of composite materials.
- c) Explain 'Pultrusion' and 'Pulforming'.
- d) Explain hand lay-up technique.
- e) List design parameters of bolted joints.
- f) What are natural Composites?

Q 2. Answer any four parts of the following.

- a) List structural applications of composites
- b) What is MMC?
- c) Explain the Mechanical Fasteners.
- d) Explain purposes of machining .
- e) What are volume and mass function?
- f) What are shape memory alloys?

Q 3. Answer any two parts of the following

- a) Mention the advantages and limitations of Natural fibers.
- b) Briefly explain the wear and machinability properties of MMCs.
- c) Explain Major and Minor Poisson's ratio.

Q 4. Answer any two parts of the following.

- a) Explain shape and distribution of particulate on properties of composites.
- b) With a neat sketch explain the Laserjet cutting.
- c) Derive the equation for transverse and shear modulus for composites.

Q 5. Answer any two parts of the following.

- a) Explain recent development in natural fiber composites.
- b) Explain polymer based sandwich structure.
- c) List and briefly explain characteristics of composite materials.