

22352

11920

3 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (6) Abbreviations used are their usual meaning.

Marks

1. Attempt any FIVE :

10

- (a) Define Composite.
- (b) State any two properties of Vinyl ester resin.
- (c) Give any four advantages of FRP.
- (d) State principle of Compression Moulding Process.
- (e) Enlist Composite Manufacturing Process.
- (f) List any four applications of Composite in Marine.
- (g) Define Nano Composite.

2. Attempt any THREE : **12**

- (a) State function and example of following additives :
 - (i) Inhibitor
 - (ii) Coupling Agent
- (b) Describe manufacturing process of pre-pages with neat sketch.
- (c) Describe preparation of boran fibre.
- (d) Define Bio-composite, state its any four applications.

3. Attempt any THREE : **12**

- (a) Describe the role of different components in composite.
- (b) Explain curing reaction of thermosetting resin.
- (c) Describe preparation of Epoxy resin with suitable reaction.
- (d) Explain manufacturing of glass fiber by direct melt process.

4. Attempt any THREE : **12**

- (a) Select and describe the manufacturing technique used for pressure vessel with neat sketch.
- (b) Describe with neat sketch sheet moulding compound manufacturing process.
- (c) Suggest the core materials for sandwich composite. Explain any two.
- (d) Suggest the Reinforcement orientation for Helmate with proper justification.
- (e) Select and describe technique for manufacturing of composite laminates with neat sketch.

5. Attempt any TWO :**12**

- (a) Explain working principle of RTM with neat sketch and state their applications.
- (b) Explain the preparation of polymer matrix used for high temperature application, state their important characteristics.
- (c) State any four applications of composite in :
 - (i) Construction
 - (ii) Aerospace

6. Attempt any TWO :**12**

- (a) State any six faults, their causes and remedies in composite product.
 - (b) State different forms of glass fiber. Give their classification based on application.
 - (c) Identify and explain method used to manufacture composite profile of infinite length with neat sketch.
-

