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Question Paper Code: 52105

M.E. DEGREE EXAMINATION, MAY 2017

Elective

CAD / CAM

15PCD525 – COMPOSITE MATERIALS AND MECHANICS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) What is matrix material in composite? How matrix materials are selected? State its desirable properties of the matrix materials . (20)

Or

(b) Explain the properties of

(i) Long fiber composites and Short fiber composites (10)

(ii) Briefly explain about bonding techniques of composites. (10)

2. (a) Derive an expression for Young's modulus of fibre reinforced composites in iso-stress condition. (20)

Or

(b) Derive the expression to get transformation matrix of rotation for stress and strain relation. (20)

3. (a) Derive the expression for finding the stress strain relation for angle ply laminates. (20)

Or

(b) What is laminate? Derive an expression for three stiffness matrices [A], [B] and [D] for a 2^D laminates composite. (20)

4. (a) Explain Maximum stress theory and Maximum strain failure theory. (20)

Or

(b) Briefly explain the significant factors influencing on composite delamination. (20)

5. (a) Explain the squeeze casting of MMC for structural applications. (20)

Or

(b) Explain the different class of composite material with specified applications. (20)
