

215/13

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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

MANUFACTURING ENGINEERING

Seventh Semester

MF 9027 Processing of Plastics and Composite Materials

(Regulation 2008)

18

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. How transparency is obtained in plastics?
2. Define Composites.
3. What is parison?
4. What are the requirements an extruder has to satisfy?
5. What is self tapping screw?
6. What are the precautions to be followed while machining plastics?
7. What is autoclave moulding?
8. How will you cure the PMCs without the addition of external heat?
9. What is compo casting?
10. What is the major driving force for the application of composites in aerospace industries?

Part – B (5 x 16 = 80 marks)

11. Explain various extrusion processes with neat sketches.
12. a) Discuss the chemical structure, properties and uses of any two thermoplastics and any one thermoset plastics.

OR

- b) With a schematic diagram explain the fabrication of Aramid fibers, Glass fibers and Metallic fibers with neat sketches.

13. a) With sketches brief out the various methods used for welding of plastics.

OR

b) With sketches brief out the various methods used for machining of plastics.

14. a) With neat sketch explain sheet moulding compound systems used for manufacturing polymer matrix composites.

OR

b) Discuss the procedure involved in filament winding, pultrusion and centrifugal casting of polymer matrix composites.

15. a) Discuss the salient features, procedure and mechanism involved in the powder metallurgy process used for manufacturing metal matrix composites.

OR

b) Explain the procedure involved, applications and the difficulties encountered in the following methods of manufacturing of metal matrix composites.

(i) Stir casting.

(ii) Squeeze casting.

(iii) Diffusion bonding.