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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

MANUFACTURING ENGINEERING

SEVENTH SEMESTER

MF 9027 PROCESSING OF PLASTICS AND COMPOSITE MATERIALS

(Regulation 2008)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. How transparency is obtained in plastics.
2. Name two natural composites and state their matrix and reinforcements.
3. Name any two casting methods used for making sheets.
4. What are the requirements an extruder has to satisfy?
5. What are the principles to be followed while machining plastics?
6. What is self tapping screw? How many times it can be screwed and unscrewed?
7. How the resin is cured without any external heat in the lay-up process?
8. What is autoclave moulding?
9. What is the relationship between porosity and particle size in Powder Metallurgy ?
10. What is the major driving force for the application of composites in aerospace industries?

Part – B (5 x 16 = 80 marks)

11. With a schematic diagram explain the fabrication of Glass fibers and Carbon fibers.
12. a) i) How bottles are produced explain with neat sketches.
ii) With figures describe the procedure and mechanism involved in Plug assisted thermoforming and drape forming.

(OR)

- b) With figures explain the mechanism involved, merits and disadvantages of different types of extrusion processes.

13. a) With sketches briefly explain the various methods used for welding of plastics.

(OR)

b) Discuss the tool nomenclature and the machinability in sawing, milling and turning 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 with neat sketches the processing of Stir casting, Squeeze casting and in-situ process of metal matrix composites