

C 3295

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Second Semester

(Regulation 2004)

Mechanical Engineering

ME 1151 — MANUFACTURING TECHNOLOGY — I

(Common to B.E. (Part-Time) First Semester Regulation – 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the factors that you will consider before selecting materials for pattern?
2. List any four products manufactured by the centrifugal casting process.
3. What is the function of Tungsten in TIG welding?
4. What are the specific situations in which electro slag welding is used?
5. "In a four – high rolling mill, small diameter rolls as working rolls" Why?
6. Which Extrusion process requires more force and why?
7. List any four components manufactured by the Drawing Process.
8. What are the common Explosives used in Explosive forming process?
9. What is degree of polymerization?
10. Plastic milk bottle is a thermosetting of thermoplastic? How could you find out?

PART B — (5 × 16 = 80 marks)

11. (a) (i) With the aid of diagrams explain the investment casting process. List out the advantages, limitations and applications. (12)

(ii) What is the need of special casting process? (4)

Or

(b) (i) What is the principle of Induction furnace? (4)

(ii) List the various casting defects. Give their reasons and suggest the remedies. (12)

12. (a) What is the Principle of Electron Beam welding process? How does it differ from Leaser Beam Welding Process? (16)

Or

(b) (i) State the important functions of the flux Coatings of electrode used in manual metal arc welding process. (4)

(ii) What are the common problems encountered with the use of coated electrodes? (4)

(iii) With neat diagram explain the process of Resistance seam welding. (8)

13. (a) With the help of neat sketches, explain how a hexagonal nut can be manufactured from a cylindrical rod. (16)

Or

(b) (i) With the aid of neat sketches explain the wire drawing process. (8)

(ii) How round section are manufactured by rolling process. Explain the various sequences of operation. (8)

14. (a) Explain the following sheet metal operations Based on principle, operation, advantages, limitations, and applications. (16)

(i) Bending

(ii) Drawing and

(iii) Stretch forming.

Or

(b) (i) In what circumstances magnetic pulse forming can be employed economically. (4)

(ii) Distinguish between confined and unconfined system in explosive forming process. (12)

15. (a) For manufacturing the following components suggest a suitable methods Justify your selection. (16)

(i) Electrical Switches

(ii) T.V. Cabinets and

(iii) Ball Pen Cap.

Or

(b) (i) Which process is suitable for Processing thermosetting plastics? State the reasons. (8)

(ii) With neat sketch explain the working principle of screw type injection moulding machine. (8)
