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D 4239

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2008.

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 is the function of a blind riser?
2. What are the possible casting defects when the pattern design is poor?
3. In TIG Welding what is the function of Tungsten?
4. What is the basic principle of Diffusion Welding?
5. Why is the "Recrystallisation Temperature" more important in metal deformation process?
6. Why Lubrication is used in rolling process?
7. What is Peen Forming Process?
8. Differentiate Coining and Embossing operations in sheet metal.
9. List any four components manufactured by the Blow moulding process.
10. What are the common methods used for bonding of thermoplastics?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Distinguish between green sand mould and dry sand mould based on :
- (1) Preparation
 - (2) Properties
 - (3) Application. (10)
- (ii) What are the constituents in moulding sand? Explain the functions of Binder in Moulding sand. (6)

Or

- (b) (i) Generally, high quality castings are produced by the centrifugal process. State the reason. (4)
- (ii) List out various non-destructive testing methods used for testing of castings. Explain radiography test used for finding the internal defects in casting. (12)
12. (a) (i) How are the components welded by spot welding process? Explain with suitable diagram. (8)
- (ii) Describe the various types of flames in oxy-acetylene gas welding process. List the applications. (8)

Or

- (b) (i) Explain the process of Gas-metal Arc welding Technique. List the specific applications. (8)
- (ii) What is friction welding process? How the metals are welded in this process? List the major advantages. (8)
13. (a) (i) Explain with an example for the following forging operation :
- (1) Hand forging
 - (2) Drop forging. (8)
- (ii) What is impact Extrusion Process? With line diagram, explain the process in detail. List the specific applications. (8)

Or

- (b) (i) What are common methods employed for tube Drawing Operation? Explain any one method in detail. (6)
- (ii) How is the square billet converted into a round rod using rolling process? Explain sequence of operations with neat sketches. (10)
14. (a) (i) Explain the principle of Bending Operation. How the cylindrical tubes are bent in Industry? (8)
- (ii) What are the common methods used for stretch forming? Explain any one in detail. (8)

Or

- (b) (i) With neat sketches explain the super plastic forming process. List the specific advantages and application. (8)
- (ii) Distinguish between confined and unconfined system in Explosive forming process. (8)
15. (a) Suggest a suitable method for manufacturing the following components and also justify your answer. (16)
- (i) Electrical Switches.
- (ii) Tooth Brush Handle
- (iii) Cell Phone cover
- (iv) Transparency film.

Or

- (b) (i) Explain the working principle of Rotational moulding process. List the specific applications. (8)
- (ii) What are the suitable processes for processing thermoplastic? State the reasons. (8)