Reg. No. : | | | | | | | | | | | | |

Question Paper Code : Q 2316

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

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. Mention any four types of pattern. What is a sweep pattern?

2. What is shell moulding? Give one application.

3. List the types of welding flames. What type of flame is suitable for welding stainless steel?

4. Differentiate transfer arc and non-transfer arc welding.

5. What is upset forging? What type of components is produced using this process?

6. Compare direct and indirect extrusion processes.

7. What is metal Spinning operation? Name one component produced using this process.

8. What is spring back? Name two methods to combat spring back.

9. Give the list of products produced using blow moulding.

10. Differentiate thermosetting and thermo plastics.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the different types of melting furnaces? Explain any one of them in detail. (8)

(ii) Describe the various materials used in pattern making. State the factors to be considered for selection of the pattern material. (8)

Or

(b) (i) Explain the process of centrifugal casting. (8)

(ii) What are the defects in casting? Explain the cause for these defects. (8)

12. (a) (i) How is welding process classified? (8)

(ii) What is percussion welding? Explain with a neat sketch. (8)

Or

(b) (i) Explain the process of electron beam welding. (8)

(ii) Compare brazing and soldering process. (8)

13. (a) (i) Write a brief note on types of rolling mills. Explain the working of a cluster type rolling mill. (8)

(ii) Distinguish between hot and cold extrusion. Give a few applications. (8)

Or

(b) (i) With the help of a sketch explain the process of explosive forming. (8)

(ii) What are the typical tests carried out on a sheet metal to check for its formability? (8)

14. (a) What are the functions of the following in a press tool? Stripper plate, pressure pad, knocks out, bolster plate. (16)

Or

(b) Explain the following processes rotary swaging, thread rolling, power springing, intra-forming. (16)

15. (a) (i) With a neat sketch explain the process of plastic injection moulding. (8)

(ii) Name the properties of plastic which have made them popular engineering materials. Give few applications. (8)

Or

(b) (i) What are the considerations in design of plastic molded parts? Explain. (8)

(ii) Write a brief note on machining of plastics. (8)