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

S 4824

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Annual Pattern — First Year

Mechanical Engineering

ME 1 X 01 — MANUFACTURING TECHNOLOGY — I

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

PART A — (10 × 2 = 20 marks)

1. What are the different ingredients of core sand?

2. Define mould and core.

3. What are the different types of gas flames? How are they formed?

4. Differentiate soldering and brazing.

5. What do you understand by forging? What are the advantages of forgings?

6. List out the forgings defects.

7. What is stretch forming? What are its applications?

8. What are the different types of metals used in sheet metal work?

9. What is the difference between hot compression moulding and transfer moulding?

10. What is thermoforming?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the factors which govern the selection of a proper material for pattern making? (8)

(ii) What are the specific advantages of match plate patterns? Explain how they are used for making mould. (8)

Or

(b) Explain with a sketch

(i) Investment casting (8)

(ii) Centrifugal casting (8)

12. (a) (i) With a help of a neat sketch describe the submerged arc welding process? (10)

(ii) What are the different types of electrode? What are the functions of flux coating? (6)

Or

(b) (i) Briefly explain the working principle of the plasma arc welding process and mention their applications? (10)

(ii) What is the principle of friction welding process? (6)

13. (a) Write a short notes on

(i) Cold forging (ii) Roll forging. (2 × 5)

(iii) High energy rate forming. (6)

Or

(b) Describe the principle of rolling. Write the various kinds of rolling mills along with their applications. (16)

14. (a) Write a short notes on

(i) Shearing (ii) Blanking (iii) piercing (iv) Shaving. (4 × 4)

Or

(b) (i) Describe the process of hydro forming. (6)

(ii) Describe the various methods of rubber forming. Where are these processed used? (10)

15. (a) (i) Describe briefly the process of injection moulding as used for producing plastic components. (8)

(ii) What is thermo forming? What are its relative merits and demerits? (8)

Or

(b) Write short notes on :

(i) Rotational moulding (5)

(ii) Compression moulding (5)

(iii) Transfer moulding. (6)