

Reg. No. :

Question Paper Code : 31335

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Third Semester

Mechanical Engineering

ME 2201 — MANUFACTURING TECHNOLOGY – I

(Common to Mechanical Engineering (Sandwich)/Industrial Engineering/Industrial Engineering and Management and Mechanical and Automation Engineering)

(Regulation 2008)

(Also common to PTME 2201 – Manufacturing Technology – I for B.E (Part-Time) Fifth Semester – Mechanical Engineering – Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by core print?
2. Name the different melting furnaces employed for metal casting.
3. What is the minimum distance maintained between two successive spot welds made by resistance welding? Why?
4. Write short notes on transferred and non transferred arc in plasma arc welding.
5. What is ironing?
6. What is meant by fullering?
7. What is spring back effect and how it is overcome in sheet metal work?
8. What are the various types of sheet metal dies?
9. What are the different type's compression moulds?
10. Define pulforming.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the various pattern allowances which can be quantitatively specified. (8)
(ii) What are the desirable properties of moulding sand for sandcasting? Explain briefly each one. (8)

Or

- (b) (i) With illustrative sketches, explain the various casting defects indicating, their causes and remedies. (8)
(ii) Explain the stages of preparing shell mould, with suitable sketches. List the unique advantages of making castings in shell moulds. (8)

12. (a) (i) Explain in brief the functions of various coatings on a welding rod. (6)
(ii) Explain in detail the plasma arc welding process and write its applications and demerits. (10)

Or

- (b) (i) Explain with neat sketch the principle of resistance welding. Differentiate between upset welding and flash welding. (8)
(ii) Enumerate the various welding defects with causes of occurrence and describe a method of detecting cracks on a weld surface. (8)

13. (a) (i) Explain the steps involved in the foreign operation. (8)
(ii) Explain the precision forging process with neat sketch and also compare with closed die forging process. (8)

Or

- (b) (i) Explain the various defects present on the rolled plate surfaces with suitable sketch. (8)
(ii) Write short notes on impact extrusion and hydro static extrusion. (8)

14. (a) Describe with illustrative sketches, the following sheet metal operations:
(i) Bending edge of a sheet using wiping-die
(ii) Roll bending
(iii) Stretch forming
(iv) Deep drawing. (4 × 4 = 16)

Or

- (b) (i) With a neat sketch, explain the rubber pad forming process. How does it differ from rubber hydro forming process? (8)
(ii) Describe the metal spinning process with a neat sketch and state its advantages and specific uses. (8)

15. (a) (i) What is rotational moulding? State its advantages and limitations. (8)
(ii) Explain briefly any two bonding methods of thermoplastics. (8)

Or

- (b) Explain briefly with neat sketches two commercially used methods of blow moulding for blowing of Plastics bottles and mention their specific advantages. (16)