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Question Paper Code : 20805

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Third/Fifth Semester

Mechanical Engineering

ME 6302 – MANUFACTURING TECHNOLOGY – I

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

(Regulations 2013)

(Also common to : PTME 6302 – Manufacturing Technology – I for B.E. (Part-Time) – Second Semester – Mechanical Engineering – Regulations – 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List any four characteristics desired for cores in sand moulding process.
2. What is meant by carbon dioxide moulding?
3. Define welding process.
4. What do you understand by soldering?
5. Distinguish between forward hot extrusion and backward hot extrusion.
6. What are the types of roll passes?
7. What is super plastic forming?
8. Define spring-back effect.
9. What are thermoplastics? Give examples.
10. What is film blowing process?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Enumerate any three types of pattern allowances. (6)
(ii) Explain the constructional features of cupola furnace with neat diagram. (7)
- Or
- (b) (i) Describe the ceramic mould casting process. (7)
(ii) Explain with neat schematic true centrifugal casting process. (6)

12. (a) (i) Explain the types of flame with its characteristics used in gas welding. (6)
(ii) Describe with sketches gas metal arc welding process. (7)

Or

- (b) (i) Explain electroslag welding process with necessary diagram. (7)
(ii) Describe thermit welding process. (6)

13. (a) (i) Compare hot working and cold working of metals. (6)
(ii) Explain impression die forging process. (7)

Or

- (b) (i) Explain any four rolling defects. (8)
(ii) Explain the principle of tube drawing process. (5)

14. (a) (i) Discuss the characteristics to be considered in sheet metal forming. (5)
(ii) Explain shearing operations in detail. (8)

Or

- (b) (i) Describe hydroforming process with its applications. (7)
(ii) With neat schematic explain explosive forming process. (6)

15. (a) (i) Explain the injection moulding process with reciprocating screw set up. (7)
(ii) Describe compression molding process. (6)

Or

- (b) (i) Explain vacuum thermoforming process. (7)
(ii) Describe the blow molding process. (6)

PART C — (1 × 15 = 15 marks)

16. (a) Enumerate the step by step procedure involved in investment casting process. State its advantages and limitations. (15)

Or

- (b) Explain the constructional features and working of electron beam welding process. (15)