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Question Paper Code : 51339

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024.

Third/Fifth/Sixth Semester

Mechanical Engineering

ME 3393 — MANUFACTURING PROCESSES

(Common to Aeronautical Engineering/Aerospace Engineering/Automobile Engineering/Industrial Engineering/Industrial Engineering and Management/Mechanical Engineering (Sandwich)/Safety and Fire Engineering)

(Regulations 2021)

(Also common to PTME 3393 – Manufacturing Processes for B.E. (Part–Time)
Second Semester – Mechanical Engineering – Regulations 2023)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name the various types of cores.
2. State any four properties of moulding sand.
3. What are the desirable properties of a metal that would provide good weldability for resistance welding?
4. Why is flux used in soldering?
5. What are the types of hot extrusion process?
6. What is meant by recrystallisation temperature?
7. What are the factors affecting shearing operation?
8. What is the basic principle of magnetic pulse forming?
9. What are the types of compression moulding?
10. Give some examples for thermosetting plastics.

PART B — (5 × 13 = 65 marks)

11. (a) Briefly explain the procedure to be followed for making a sand mould.

Or

- (b) With a help of a neat sketch explain the process of investment mould casting. Also state its applications.

12. (a) Describe with a neat sketch the principle of submerged arc welding. State its advantages, disadvantages and applications.

Or

- (b) Explain Electro slag Welding process with a neat sketch. Also state its advantages and disadvantages.

13. (a) With suitable sketches, explain the following : (6+7)

(i) Open die forging

(ii) Closed die forging.

Or

- (b) What are the defects in parts produced by rolling? Explain in detail.

14. (a) Describe any four shearing operations in sheet metal work with a neat sketch.

Or

- (b) Describe the working principle of hydro-forming process with a help of neat sketch. Also list out its advantages.

15. (a) (i) Write the difference between thermoplastics and thermosetting plastics. (8)

(ii) What are the advantages and disadvantages of plastics? (5)

Or

- (b) (i) Explain the working principles and application of compression moulding process. (8)

(ii) Write a short note on Blow moulding process with neat sketch. (5)

PART C — (1 × 15 = 15 marks)

16. (a) Explain the working principle, advantages, limitations and applications of friction stir welding with neat sketches.

Or

- (b) How are patterns classified? Describe any five types with neat sketches and state the uses of each of them.
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