



CBCS SCHEME

18ME45B/18MEB405

Fourth Semester B.E. Degree Examination, Jan./Feb. 2023 Metal Casting and Welding

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define manufacturing process. With a suitable sketch, explain the classification of manufacturing process. (10 Marks)
- b. What do you mean by the term pattern allowance? With a suitable sketch, elaborate different types of pattern allowance. (10 Marks)

OR

- 2 a. With a neat sketch, explain the steps involved in green sand moulding process. (12 Marks)
- b. With a neat sketch, explain the working of jolt moulding machine. (08 Marks)

Module-2

- 3 a. With a neat sketch, explain the working of hot chamber pressure die casting process. (10 Marks)
- b. With a neat sketch, explain the working of continuous casting process. (10 Marks)

OR

- 4 a. Briefly classify melting furnaces and explain the working of gas fired pit furnace with a neat sketch. (10 Marks)
- b. With a neat sketch, describe the construction and working of direct arc electric furnace. (10 Marks)

Module-3

- 5 a. Why the degasification in liquid metals is necessary? Discuss briefly the methods of removing entrapped gases in liquid metals. (10 Marks)
- b. Explain the methods of achieving directional solidification. (10 Marks)

OR

- 6 a. List the casting defects. Explain any four defects with causes and remedies. (10 Marks)
- b. With a neat sketch, explain the stir casting process. (10 Marks)

Module-4

- 7 a. Define welding. Classify the welding processes. (04 Marks)
- b. Explain flux shielded metal arc welding with a neat sketch. (10 Marks)
- c. List advantages and disadvantages of welding. (06 Marks)

OR

- 8 a. With a neat sketch, explain how laser beam can be used for welding process. Mention its advantages and disadvantages. (10 Marks)
- b. Explain with neat sketch:
 - (i) Friction welding process
 - (ii) Explosive welding process (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

Module-5

- 9 a. Explain the formation of different zones during welding. (10 Marks)
b. With a neat sketch, explain the working of oxy acetylene welding process. Mention its advantages and disadvantages. (10 Marks)

OR

- 10 a. With a neat sketch, explain any five defects in welding. (10 Marks)
b. List non destructive inspection methods and with a neat sketch, explain any one non destructive inspection method. (10 Marks)
