



CBCS SCHEME

15ME35A/15MEA305

Third Semester B.E. Degree Examination, June/July 2023 Metal Casting and Welding

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Define Casting. With neat sketch, explain any three types of pattern used in casting process. (08 Marks)
b. List the types of pattern allowances and explain any three in detail. (08 Marks)

OR

- 2 a. Write a neat sketch and explain working of sand slinger type machine. (08 Marks)
b. Discuss the various functions of Top, Bottom, Parting line and Horn gate. (08 Marks)

Module-2

- 3 a. How furnaces are classified? Explain with a neat sketch, Gas fired pit furnace and mention its advantages. (08 Marks)
b. With a neat sketch, explain working of cupola furnace. (08 Marks)

OR

- 4 a. What is gravity die casting? Explain with a neat sketch, the working principle of true centrifugal casting. (08 Marks)
b. Mention applications, merits and demerits of continuous casting processes. (08 Marks)

Module-3

- 5 a. Define nucleation. List the degasification methods and explain any two with neat sketch. (08 Marks)
b. Name the types of sand casting defects. Write its causes and remedies of three defects with simple sketch. (08 Marks)

OR

- 6 a. Mention applications, advantages and limitation of aluminium castings. (08 Marks)
b. With a neat sketch, explain the working of stir casting. (08 Marks)

Module-4

- 7 a. Mention any four advantages and disadvantages of atomic hydrogen welding. (08 Marks)
b. Explain laser beam welding with a neat sketch. (08 Marks)

OR

- 8 a. Define resistance welding. Explain working of Thermit welding with a neat sketch. (08 Marks)
b. Write a short note on friction welding and explosive welding. (08 Marks)

Module-5

- 9 a. Explain in detail the heat effected zone in welding. (08 Marks)
b. Explain with a neat sketch magnetic particle inspection. (08 Marks)

OR

- 10 a. Mention any four differences between soldering, brazing and welding. (08 Marks)
b. Explain with a neat sketch X-ray radiography technique. (08 Marks)

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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.