

CBCS SCHEME

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15MEA405/15ME45A

Fourth Semester B.E. Degree Examination, July/August 2021 Metal Casting and Welding

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Define manufacturing process. What are the classification of manufacturing process? Explain briefly. (08 Marks)
b. Briefly discuss the steps involved in making a sand casting. (08 Marks)
- 2 a. Briefly discuss binders and additives used in sand molding. (04 Marks)
b. Draw and explain the steps followed in molding using sand slinger. (08 Marks)
c. Explain the elements involved in gating system. (04 Marks)
- 3 a. Define furnace. Sketch and explain the working principle, constructional feature of gas fired pit furnace. (08 Marks)
b. With the help of a neat diagram, explain direct arc electric furnace. (08 Marks)
- 4 a. Explain with a neat sketch cold chamber die casting process. (08 Marks)
b. With the help of a neat diagram, explain continuous casting process. (08 Marks)
- 5 a. Explain, what are the factors/methods to control directional solidification. (08 Marks)
b. Define the term degasification. With suitable sketch, explain any two methods of degasification. (08 Marks)
- 6 a. How are casting defects are classified? Explain briefly. (08 Marks)
b. With a neat sketch, explain the principle of stir casting process. (08 Marks)
- 7 a. Define welding. What are the classifications of welding? List out the application, advantages and disadvantages of welding process. (08 Marks)
b. With the help of a suitable sketch, explain flux shielded metal arc welding process. (08 Marks)
- 8 a. Explain with a neat sketch laser welding process. List out advantages of laser welding process. (08 Marks)
b. Explain with a neat sketch Thermit welding process. List out advantages and disadvantages of Thermit welding process. (08 Marks)
- 9 a. Discuss with a neat sketch the formation of different zones during welding process. (08 Marks)
b. What are the defects of welding? Explain briefly. (08 Marks)
- 10 a. With a help of neat diagram, explain oxy-acetylene gas welding process. Give advantages and disadvantages of gas welding. (08 Marks)
b. Explain with a neat sketch, working principle of ultrasonic inspection. List out advantages of ultrasonic inspection. (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.