

# CBCS SCHEME

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17ME35A

## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 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 casting process. Explain steps involved in casting process. (10 Marks)
- b. What is pattern? Discuss the importance of providing various allowances to the pattern. (06 Marks)
- c. Define core. Give its classification. (04 Marks)

OR

- 2 a. With a neat sketch explain the working of Jolt moulding machine. (08 Marks)
- b. Explain investment moulding process with necessary sketches listing its advantages and disadvantages. (10 Marks)
- c. List the functions of a Riser. (02 Marks)

### Module-2

- 3 a. Explain Hot chamber pressure die casting process with a neat sketch. (08 Marks)
- b. Explain continuous casting process with a neat sketch. (08 Marks)
- c. Classify melting furnaces. (04 Marks)

OR

- 4 a. With a neat sketch describe the construction and working of cupola furnace. (10 Marks)
- b. Describe the construction and working of Direct Arc Electric furnace with neat sketches. (10 Marks)

### Module-3

- 5 a. Define solidification. List solidification variables. (04 Marks)
- b. List and explain the methods of achieving directional solidification. (08 Marks)
- c. Why the degasification in liquid metals is necessary? Discuss briefly the methods of removing entrapped gases in liquid metals. (08 Marks)

OR

- 6 a. Name the casting defects. Explain their causes and remedies. (08 Marks)
- b. With a neat sketch explain the stir casting process. (08 Marks)
- c. Mention the advantages and limitations of casting process. (04 Marks)

### Module-4

- 7 a. Define welding. Classify the welding processes. (04 Marks)
- b. Explain Metal-Inert-Gas (MIG) welding process with a neat diagram. (08 Marks)
- c. Explain spot welding process mentioning its applications. (08 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.

OR

- 8 a. Explain the thermit welding process with sketch listing its advantages and applications. (10 Marks)
- b. With a neat diagram, explain electron beam welding process. Mention its advantages, disadvantages and applications. (10 Marks)

**Module-5**

- 9 a. Brief about formation of different zones in welding process. (05 Marks)
- b. Define Brazing. Brief about Torch brazing process. (07 Marks)
- c. Explain Oxy-acetylene welding process with a neat sketch. (08 Marks)

OR

- 10 a. With a neat sketch explain magnetic particle inspection method and list its advantages. (10 Marks)
- b. Explain Radiography inspection method with its advantages and disadvantages. (10 Marks)

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