

CBCS SCHEME

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15MEA305/15ME35A

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019

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. Name the factors that determine the selection of a casting alloy. (04 Marks)
b. Explain various pattern allowances. (08 Marks)
c. What are the requirements of base sand? (04 Marks)

OR

- 2 a. Explain the working of a sand slinger with a neat sketch. (08 Marks)
b. Explain with neat figures, shell moulding technique. (08 Marks)

Module-2

- 3 a. Explain with a diagram the working of electrical arc furnace. (08 Marks)
b. Explain with a neat figure, the principle of working of resistance furnace. (08 Marks)

OR

- 4 a. Explain continuous casting process with a neat sketch. (08 Marks)
b. Explain squeeze casting process with diagrams. (08 Marks)

Module-3

- 5 a. Name the solidification variables and explain them briefly. (06 Marks)
b. List the advantages and limitations of casting process. (06 Marks)
c. What is meant by grain refining and pouring temperature of aluminium castings? (04 Marks)

OR

- 6 a. Explain various degasification methods in liquid metals. (08 Marks)
b. Enlist the advantages and limitations of aluminium castings. (04 Marks)
c. Explain the reasons for fluxing and flushing of aluminium castings. (04 Marks)

Module-4

- 7 a. Define welding. Enumerate the advantages and limitations of welding. (05 Marks)
b. Describe the working of submerged arc welding with a neat diagram. (05 Marks)
c. Explain the principle of operation of seam welding process with a neat sketch. (06 Marks)

OR

- 8 a. Explain the flux shielding metal arc welding with a sketch. (08 Marks)
b. Explain the principle of spot welding with a neat sketch. (08 Marks)

Module-5

- 9 a. Explain the formation of different zones in weld with a neat sketch. (08 Marks)
b. Define soldering. Explain the mechanism of soldering. (04 Marks)
c. Differentiate between soldering and brazing. (04 Marks)

OR

- 10 a. Explain the principle of Oxy-acetylene welding. (03 Marks)
b. Explain the types of flames in oxy-acetylene welding with sketches. (06 Marks)
c. Briefly explain non-destructive testing method in welding. Mention its advantages and limitations. (07 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.