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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)

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)
