

CBCS SCHEME

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15MEA405

Fourth Semester B.E. Degree Examination, June/July 2018 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. Briefly explain the steps involved in manufacturing of product by casting process. (08 Marks)
b. What is pattern? Explain different pattern allowances. (08 Marks)

OR

- 2 a. With a neat sketch explain the working principle of "Sand Slinger". (08 Marks)
b. Explain with neat sketch carbon dioxide (CO₂) moulding process. (08 Marks)

Module-2

- 3 a. How do you classify the melting furnace? Draw a neat sketch and explain the working of gas fired pit furnace. (08 Marks)
b. What are the zones in "CUPOLA"? With neat sketch explain Cupola furnace. (08 Marks)

OR

- 4 a. With neat sketch, explain continuous casting process. (08 Marks)
b. With neat sketch, explain Hot chamber pressure die casting process. (08 Marks)

Module-3

- 5 a. What is nucleation? Explain type of nucleation with neat sketch. (08 Marks)
b. What is degasification in liquid metals? Explain with neat sketch flushing degasification method. (08 Marks)

OR

- 6 a. With neat sketch, explain Stri casting set-up. (08 Marks)
b. What is fettling? What are the steps involved in fettling? Explain briefly sans casting defects. (08 Marks)

Module-4

- 7 a. Sketch and explain "MIG" [Metal Inert Gas welding] welding process. Mention its advantages and disadvantages. (08 Marks)
b. Explain with a neat sketch, "SAW" [Submerged Arc Welding] process. (08 Marks)

OR

- 8 a. Explain with neat sketch:
(i) Seam welding process (ii) Explosive welding process. (08 Marks)
b. Explain with neat sketch, "LASER" beam welding and mention its advantages and disadvantages. (08 Marks)

Module-5

- 9 a. What is heat affected zone (HAZ)? Explain the parameters affecting HAZ. (08 Marks)
b. Explain with neat sketch, Oxy-Acetylene welding process. (08 Marks)

OR

- 10 a. Differentiate between Soldering and Brazing. Mention their advantages and disadvantages. (08 Marks)
b. With neat sketch and explain Ultrasonic inspection of casting process. (08 Marks)

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