

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

15ME45A/15MEA405

Fourth Semester B.E. Degree Examination, Jan./Feb. 2023 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. Define Manufacturing process. Explain steps involved in Sand Casting process. (08 Marks)
b. State the functions of a pattern. Explain different types of pattern allowances with sketch. (08 Marks)

OR

- 2 a. What is a Core? Explain green sand moulding process with neat sketches. (08 Marks)
b. List different types of sand moulding processes. Explain squeeze moulding with a neat sketch. (08 Marks)

Module-2

- 3 a. Explain continuous casting process with a neat sketch. (08 Marks)
b. Define centrifugal casting. Brief about working principle of true centrifugal casting with sketch. (08 Marks)

OR

- 4 a. Classify the melting Furnaces. Explain the working principle of resistance furnace with a neat sketch. (08 Marks)
b. With a neat sketch, explain the working principle of Cupola furnace. (08 Marks)

Module-3

- 5 a. Discuss the causes and remedies of various casting defects. (08 Marks)
b. List and explain solidification variables. (08 Marks)

OR

- 6 a. Brief about the sources of gases in liquid metals. Explain Flushing degasification method. (08 Marks)
b. Explain stir casting method with a neat sketch. (08 Marks)

Module-4

- 7 a. Define welding. Explain MIG welding process. (08 Marks)
b. Give detailed classification of welding process, mention applications, advantages and limitations of welding process. (08 Marks)

OR

- 8 a. With a neat sketch, explain the Thermit welding process mentioning its advantages, disadvantages and applications. (08 Marks)
b. Explain Electron Beam Welding [EBW] process. Mention its applications. (08 Marks)

Module-5

- 9 a. Define HAZ. Explain formation of different zones during welding process. (08 Marks)
b. List the welding defects. Discuss about their causes and remedies. (08 Marks)

OR

- 10 a. Explain Gas Cutting (Oxy-acetylene cutting) process with a neat sketch. (06 Marks)
b. Differentiate between Brazing and Soldering. (04 Marks)
c. Write a note on Non-destructive test conducted for the fabricated part. (06 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.