

Model Question Paper -1 (CBCS) with effect from 2015-16

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15ME35A

Third / Fourth Semester B.E. Degree (CBCS) Examination

Metal Casting and Welding

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

MODULE – I

1. a. List and briefly explain the steps involved in making a sand casting. (08 Marks)
- b. List different types of pattern. Explain match plate pattern with a neat sketch (04 Marks)
- c. Briefly discuss the importance of binders and additives in Sand Moulding (04 Marks)

OR

2. a. Discuss the desirable properties of moulding sand. (04 Marks)
- b. Draw a neat sketch of gating system showing all the elements. (04 Marks)
- c. With a neat sketch explain the working principle of jolt and squeeze machine (08 Marks)

MODULE – II

3. a. With a neat sketch explain the different zones present in CUPOLA furnace (08 Marks)
- b. With a neat sketch explain the constructional features and working of electrical resistance furnace. List its advantages and disadvantages. (08 Marks)

OR

4. a. With a neat sketch explain continuous casting process and mention its merits and demerits. (08 Marks)
- b. What is die casting? With a neat and labeled sketch, explain cold chamber die casting process? (08 Marks)

MODULE - III

5. a. What is degassing? Explain two types of vacuum degasification methods with neat sketches. (08 Marks)
- b. Briefly explain the practical measures that can be used to control directional solidification in order to obtain sound casting (08 Marks)

OR

6. a. Explain with neat sketches different casting defects during casting process. (08 Marks)
- b. With a neat sketch, explain the principle of stir casting process. (08 Marks)

MODULE - IV

7. a. Sketch and explain TIG welding process. Mention its advantages, disadvantages and limitations (08 Marks)
- b. Explain with a neat sketch Submerged Arc Welding (SAW) process. (08 Marks)

OR

8. a. With a neat sketch explain LASER beam welding and mention its advantages, disadvantages and limitations. (08 Marks)
- b. Sketch and explain Thermit welding process and mention its advantages, disadvantages and limitations. (08 Marks)

MODULE - V

9. a. What is Heat Affected Zone (HAZ)? Explain the parameters affecting HAZ. (08 Marks)
- b. Write short notes on: a) Residual stresses in welding b) Electrodes used in welding c) Welding defects (08 Marks)

OR

10. a. Compare soldering and brazing process. Mention their advantages, limitations and applications? (08 Marks)
- b. What are different non destructive testing (NDT) methods and explain with a neat sketch Radiographic Inspection Method (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 e.g. $38+2=40$, will be treated as malpractice.