

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

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

OR

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

MODULE – II

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

OR

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

MODULE - III

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

OR

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

MODULE - IV

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

OR

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

MODULE - V

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

OR

- Compare soldering and brazing process. Mention their advantages, limitations and applications? (08 Marks)
 - 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.