

CBCS SCHEME

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18ME35B

Third Semester B.E. Degree Examination, Jan./Feb. 2021 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. Give the complete classification of manufacturing process and give examples for each process. (06 Marks)
- b. With a neat sketch explain sweep pattern and follow board pattern. (08 Marks)
- c. With a necessary sketch explain distortion allowance and draft allowance. (06 Marks)

OR

- 2 a. With a neat sketch explain Jolting machine for mould preparation. (08 Marks)
- b. With a neat sketch explain CO₂ moulding technique. (06 Marks)
- c. Write a note on following:
i) Hanging core ii) Bottom gate. (06 Marks)

Module-2

- 3 a. With a neat sketch explain gas fired pit furnace. (06 Marks)
- b. Explain with a neat sketch working of coreless induction furnace. (06 Marks)
- c. Explain the working of cupola furnace. (08 Marks)

OR

- 4 a. With a neat sketch explain pressure die casting process. (06 Marks)
- b. Explain the process of centrifugal casting process. (06 Marks)
- c. Explain the process of continuous casting process. (08 Marks)

Module-3

- 5 a. Explain the variables in the metal solidification process. (06 Marks)
- b. List the sources of gases in liquid metals and explain vacuum degassing process. (08 Marks)
- c. With a neat sketch explain induction degassing technique. (06 Marks)

OR

- 6 a. Briefly explain different methods of smoothening the surface of casting. (06 Marks)
- b. Explaining the following casting defects and list the remedies.
i) Blow hole ii) Mould mismatch iii) cold shut. (06 Marks)
- c. What a neat sketch explain stir casting process. (08 Marks)

Module-4

- 7 a. Give the complete classification of welding processes. (06 Marks)
- b. With a neat sketch explain working of TIG welding process. (06 Marks)
- c. Explain the principle of atomic hydrogen welding process and mention its advantages. (08 Marks)

OR

- 8 a. With a neat sketch explain principle and applications of projection welding process. (08 Marks)
- b. With a neat sketch explain thermit welding process. (06 Marks)
- c. Explain Laser welding process and list the advantages and disadvantages. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank page.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-5

- 9 a. Draw a neat sketch and explain terminology of a welding joint. (06 Marks)
- b. List the functions of electrode coating in welding electrode. (06 Marks)
- c. Explain the following weld defects with simple sketches (08 Marks)
 - i) Inclusion ii) Over Penetration iii) Porosity iv) Under cut

OR

- 10 a. Explain the brazing process and mention its advantages and limitations. (06 Marks)
- b. With a neat sketch explain different types of flames in gas welding process. (06 Marks)
- c. With a neat sketch explain radiographic inspection of non destructive testing (08 Marks)
