

# GBCS 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 CO<sub>2</sub> 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)



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**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)

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