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## Third Semester B.E. Degree Examination, Aug./Sept.2020 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. Define manufacturing process. With a suitable sketch explain the classification of it. (10 Marks)
- b. What is pattern? Explain various pattern allowances. (10 Marks)

**OR**

- 2 a. Explain the working of sand singer with a neat sketch. (10 Marks)
- b. With neat sketches, explain shell moulding. (10 Marks)

### Module-2

- 3 a. With a neat sketch explain cupola furnace showing different zones. (10 Marks)
- b. With a neat sketch, explain constructional features and working of coreless induction furnace. (10 Marks)

**OR**

- 4 a. With a neat sketch explain continuous casting process. (10 Marks)
- b. What is die casting? Explain hot chamber die casting with a diagram. (10 Marks)

### Module-3

- 5 a. Explain different sand casting defects, its causes and remedies. (10 Marks)
- b. What is directional solidification? Explain the methods for controlling the same. (10 Marks)

**OR**

- 6 a. Explain various methods of degasification. (10 Marks)
- b. With a neat sketch, explain stir casting process listing advantages and disadvantages. (10 Marks)

### Module-4

- 7 a. How welding process is classified? (04 Marks)
- b. Describe the working of submerged arc welding with a neat sketch. (08 Marks)
- c. With a neat sketch, explain atomic hydrogen welding. (08 Marks)

**OR**

- 8 a. With a neat sketch, explain laser beam welding. List advantages and disadvantages. (10 Marks)
- b. With a neat sketch explain, Thermit welding process. List the applications. (10 Marks)

### Module-5

- 9 a. Explain the formation of different zones in welding with a neat sketch. (08 Marks)
- b. Compare soldering and brazing process, mention advantages, disadvantages and applications. (10 Marks)
- c. What are the functions of electrode coating? (02 Marks)

**OR**

- 10 a. Explain fluorescent penetrant method of inspection with neat sketches. (08 Marks)
- b. Explain types of flames in oxy-acetylene welding. (06 Marks)
- c. With a neat sketch, explain ultrasonic inspection method. (06 Marks)