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## Third Semester B.E. Degree Examination, Jan./Feb. 2023

### Manufacturing Process – I

Time: 3 hrs.

Max. Marks: 100

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

#### Module-1

- 1 a. Explain the steps involved in casting process. (10 Marks)  
b. Write the advantages and disadvantages of casting process. (10 Marks)

OR

- 2 a. Define binder and explain different types of binder's used in moulding sand. (05 Marks)  
b. Explain principle of gates and risers and mention its types. (05 Marks)  
c. Define pattern and cores and write the classifications of pattern, needs and types of cores. (10 Marks)

#### Module-2

- 3 a. Explain the working of Jolt types moulding machine with a neat sketch. (10 Marks)  
b. Explain gravity Die-casting and pressure Die-casting system. (10 Marks)

OR

- 4 a. Explain the working of coke fired pit furnace with a neat sketch. (10 Marks)  
b. With a neat sketch, explain the different zones of cupola furnace. (10 Marks)

#### Module-3

- 5 a. Define welding process. Write the classifications of welding process. (06 Marks)  
b. Mention the different welding defects. (04 Marks)  
c. Explain the working principle of metal arc welding with a neat sketch. (10 Marks)

OR

- 6 a. Explain the formation of different zones during welding. (10 Marks)  
b. Explain working principle of Oxy – Acetylene welding with a neat sketch. (10 Marks)

#### Module-4

- 7 a. Explain briefly: i) Seam welding ii) Spot welding. (10 Marks)  
b. Explain the working principle of submerged arc welding with a neat sketch. (10 Marks)

OR

- 8 a. Explain working principle of atomic hydrogen welding process with a sketch. (10 Marks)  
b. Explain working principle of electron beam welding with a sketch. (10 Marks)

#### Module-5

- 9 a. Write the advantages and dis-advantages of soldering and brazing. (10 Marks)  
b. Differentiate soldering and brazing. (05 Marks)  
c. Explain Induction brazing and mention its advantages and limitations. (05 Marks)

OR

- 10 a. Explain Holography and ultrasonic method of inspection. (10 Marks)  
b. Write the method used for inspection of casting and welding. (05 Marks)  
c. Write a short note on:  
i) Magnetic particle  
ii) Florescent particle method of inspection. (05 Marks)

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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 eg, 42+8 = 50, will be treated as malpractice.