



# CBCS SCHEME

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## Third Semester B.E. Degree Examination, June/July 2024 Manufacturing Process

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 in casting and list the applications of casting. (10 Marks)  
b. Write short notes on pattern materials. (10 Marks)

OR

- 2 a. Illustrate the following with suitable sketches :  
i) Draft allowance ii) Distortion allowance. (10 Marks)  
b. With suitable sketches explain : i) Top gate ii) Parting gate. (10 Marks)

### Module-2

- 3 a. Illustrate centrifugal casting with a neat sketch and list advantages and disadvantages of the same. (10 Marks)  
b. Compare gravity die casting and pressure die casting. (10 Marks)

OR

- 4 a. Identify the various zones in cupola furnace and explain the reactions with a neat sketch. (12 Marks)  
b. Justify the need of directional solidification in casting. (08 Marks)

### Module-3

- 5 a. Illustrate the principle and classification of welding process. (10 Marks)  
b. Explain the principle of operation of seam welding process and list its advantages and disadvantages. (10 Marks)

OR

- 6 a. Write short notes on :  
i) Structure of welds  
ii) Heat affected zone in welding (10 Marks)  
b. What is soldering? Explain the different types of soldering. (10 Marks)

### Module-4

- 7 a. Differentiate between hot working and cold working process. (10 Marks)  
b. The state of stress at a point in a material is given by  $\sigma_x = 80\text{MPa}$ ,  $\sigma_y = 100\text{MPa}$ ,  $\tau_{xy} = 60\text{MPa}$ . If the yield strength of the material is  $150\text{MPa}$ , determine whether yielding of the material occurs or not, according to Tresca and von-Mises criteria. (10 Marks)

OR

- 8 a. With a neat sketch explain the working principle of crank press. (10 Marks)  
b. With suitable sketches explain the following press work processes :  
i) Shearing ii) Blanking iii) Bending iv) Embossing. (10 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 eg, 42+8 = 50, will be treated as malpractice.

Module-5

- 9 a. Illustrate the effect of machining parameters on surface finish. (10 Marks)  
b. Write short notes on various cutting fluids. (10 Marks)

OR

- 10 a. With a neat sketch explain the construction and working of vertical milling machine. (10 Marks)  
b. Illustrate any 5 operations of drilling machines with suitable sketches. (10 Marks)

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