

**VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY (VSSUT), ODISHA**  
**Even Mid Semester Examination for Academic Session 2024-25**

COURSE NAME: B.TECH.

SEMESTER: 2<sup>ND</sup>

**SECTION: A, C, M, N**  
**BASIC MANUFACTURING PROCESS**

FULL MARKS: 30

TIME: 90 Minutes

Answer All Questions.

The figures in the right-hand margin indicate Marks. *Symbols carry the usual meaning.*

- Q1. Answer all Questions. [2 × 3]
- a) What is the function of a chaplet? - CO1
  - b) What is the difference between liquid shrinkage and solid shrinkage during casting? - CO2
  - c) Distinguish between fusion and non-fusion welding? - CO3
- Q2. [8]
- a) Sketch the cross section of a sand mould casting which is ready for pouring and briefly explain the various important parts. Briefly describe the necessary steps in sand casting operation. - CO1
- OR
- a) What is pattern? Discuss the various types of patterns used in sand casting with suitable diagrams. Discuss the various pattern allowances in sand casting method. - CO1
- Q3. [8]
- a) Discuss different casting defects with neat sketch. - CO2
- OR [4 × 2]
- a) Explain the directional solidification with neat sketch. - CO2
  - b) What are various centrifugal casting processes? Discuss with a diagram about a semi-centrifugal casting. - CO2
- Q4. [8]
- a) Explain the principle of oxy-acetylene gas welding. Describe with neat diagram the various flames obtained in oxy-acetylene gas welding process giving the applications. - CO3
- OR [4 × 2]
- a) Define welding and classification of various welding processes with neat diagram. - CO3
  - b) Compare leftward and rightward gas welding technique with a neat sketch. - CO3