

**B.E. PRODUCTION ENGINEERING
SECOND YEAR
SECOND SEMESTER EXAM 2023**

Subject :PRIMARY PRODUCTION PROCESSES

Time :3 Hrs.

Full Marks:100

Answer any five questions.

1. A) Draw the cross-section of a typical (two-part) sand mould, briefly describing each term. 8
- B) What are the main disadvantages of dry sand moulds, compared with green sand moulds? 3
- C) Describe the Extrusion Method with figures. 4
- D) Draw the schematic diagram of an oxyacetylene welding outfit. 5
2. A) Describe the Gas Tungsten Arc Welding (GTAW) & Resistance Seam Welding (RSEW) processes. 5+5
- B) What are the major advantages of casting over other processes? 6
- C) What are the different welding positions? Explain each with sketches. 4
3. A) Describe the different types of oxy-acetylene welding flames. What are their usage areas? 6
- B) Write the Chvorinov's rule, describing each term. 2
- C) Describe:
Parting line, Facing sand, Runner, Chaplet, Gate, Moulding flask. (6 X 2=)12
4. A) Classify the principal manufacturing processes giving short description & example of each. 14
- B) Describe the Submerged Arc Welding (SAW) process. 6
5. A) Describe:
Investment Casting & Die Casting Processes. 5+5
- B) Define the following welding terms:
Puddle, Weld Metal, Penetration, Deposition Rate, Fillet Weld. (5 X 2 =) 10
6. A) What are the different types of gating? Explain each with figures. 6
- B) Describe the Shearing Process of machining. 4
- C) Draw five different types of welded jts. 5
- D) Discuss a little bit about (i) use of Chills, (ii) Insulating & Exothermic sleeves. 2+3
7. A) Write the expression of pouring time (taken to fill up the mould) for Vertical & Bottom Gating Sys. What is the optimum pouring time? 4+2

[Turn Over

- B) Draw the Fore hand & Back hand Welding techniques. 4
- C) Briefly describe the shell-mould casting process. 5
- D) Draw the sectional view representing (Electric) Arc Welding Set up. 5
- 8. A) What are the major limitations of casting processes? 5
- B) What are the factors involved in the design of risers? 5
- C) Describe the Forging process. 5
- D) Classify the various fabrication processes. 5