

**B.E. PRODUCTION ENGINEERING
SECOND YEAR
SECOND SEMESTER EXAM 2024
PRIMARY PRODUCTION PROCESSES**

FM: 100

T: 3 Hrs.

Answer any 5 Q-s.

1. a) Draw the sectional view representing (Electric) Arc Welding Set up. 5
 b) Briefly describe the shell-mould casting process. 5
 c) Draw five different types of welded jts. 5
 d) What are the major limitations of casting processes? 5

2. 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
 b) Describe the Shearing Process of machining. 4
 c) Draw the cross-section of a typical (two-part) sand mould, briefly describing each term. 8
 d) Write the Chvorinov's rule, describing each term. 2

3. a) Why are allowances given on patterns? 3
 b) What are the factors involved in the design of risers? 5
 c) Describe:
 Parting line, Facing sand, Runner, Chaplet, Gate, Moulding flask. (6 X 2=)12

4. a) What are the main disadvantages of dry sand moulds, compared with green sand moulds? 3
 b) Classify the various fabrication processes. 3
 c) Classify the principal manufacturing processes giving short description & example of each. 14

5. a) Describe the Submerged Arc Welding (SAW) process. 6
 b) Draw the Fore hand & Back hand Welding techniques. 4
 c) Describe:
 Investment Casting & Die Casting Processes. 5+5

6. a) What are the different types of gating? Explain each with figures. 6

[Turn over

- b) What are the different welding positions? Explain each with sketches. 4
- c) Describe the different types of oxy-acetylene welding flames. What are their usage areas? 6
- d) Describe the Extrusion Method with figures. 4
7. a) Define the following welding terms: (5 X 2 =) 10
Puddle, Weld Metal, Penetration, Deposition Rate, Fillet Weld.
- b) What are the major advantages of casting over other processes? 6
- c) Describe the Forging process. 4
8. a) Draw the schematic diagram of an oxyacetylene welding outfit. 5
- b) Describe the Gas Tungsten Arc Welding (GTAW) & Resistance Seam Welding (RSEW) processes. 5+5
- c) Discuss a little bit about (i) use of Chills, (ii) Insulating & Exothermic sleeves. 2+3