Roll No.

Total No. of Pages: 02

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M.Tech (ME) (Sem.-3)

ADVANCED CASTING PROCESSES

Subject Code: MTME-210 M.Code: 74986

Date of Examination: 03-01-23

Time: 3 Hrs. Max. Marks: 100

INSTRUCTIONS TO CANDIDATES:

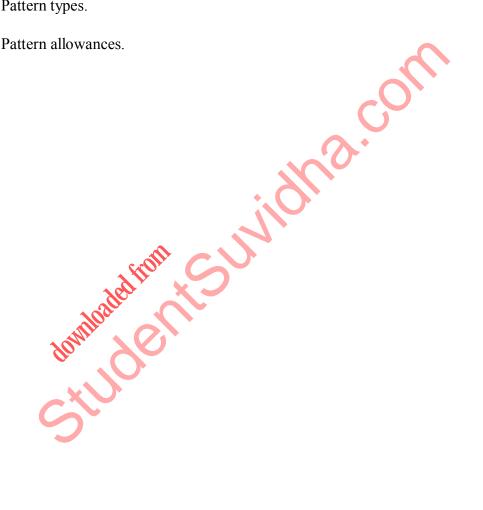
- 1. Attempt any FIVE questions out of EIGHT question.
- 2. Each question carries TWENTY marks.
- 1. a) Explain different types of Ingates and their applications.
 - b) Explain the procedure of gating system design. Also explain the gating ratios.
- 2. a) A cylindrical-shaped part is to be cast out of aluminum. The radius of the cylinder is 250 mm and its thickness is 200 mm. If the mold constant is 120 sec/mm² in Chvorinov's Rule, how long will it take the casting to solidify?
 - b) Explain different methods to prevent the Air and Slag from entering into mould cavity.
- 3. a) Explain the process of shell mould casting with the help of diagrams.
 - b) Explain the procedure and approximate values of following sand tests.
 - i) Moisture test.
 - ii) Permeability test.
- 4. a) Explain different methods of riser design.
 - b) Explain the process of die casting of vacuum casting with the help of diagrams.
- 5. a) Explain the five main casting defects that occur due to improper pouring temperature of the molten metal.
 - b) Explain the process and applications of Centrifugal casting.

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- 6. Explain the process of solidification of Alloys. Also explain different types of structures obtained by freezing of pure metals and Alloys.
- 7. How is the core sand different from moulding sand? Explain different ingredients and additives of moulding sand.

8. **Explain the following:**

- i) Pattern Materials.
- ii) Pattern types.
- iii) Pattern allowances.



NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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