

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.

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.

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