

Roll No.

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (Mechanical Engineering / Manufacturing Engineering & Automation) (Sem.-1)

ADVANCED CASTING PROCESSES

Subject Code : MTME-103

M.Code : 91564

Date of Examination : 19-01-23

Time : 3 Hrs.

Max. Marks: 100

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. What are various components of moulding sand? Discuss the role of each component.
2.
 - a) What are the commonly used pattern materials? Give their comparative characteristics.
 - b) Explain the mechanism of constitutional supercooling and dendritic structure formation.
3. Describe the process of investment casting. How are patterns prepared for the process?
4.
 - a) Discuss the advantages and limitation of die casting.
 - b) What basic tests are prescribed for testing moulding sands? Explain the process of permeability testing of sand.
5.
 - a) What are the essential conditions that are to be kept in mind while designing risers?
 - b) Differentiate between directional and progressive solidification.
6.
 - a) What are the specific advantages of the top gate and what are its applications?
 - b) What is nucleation? Also, discuss various types of nucleation.
7.
 - a) Discuss various strategies to attain directional solidification in casting process.
 - b) Enlist various characteristics of cores and core sands.
8. What are the techniques used for the inspection of castings? Explain a non-destructive method of inspection.

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