Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

M.Tech. Winter 2018 - 19 Examination

Semester: 1 **Date: 11/12/2018**
Subject Code: 203208102 **Time: 10:30 am to 01:00 pm**
Subject Name: Advance Casting Technology **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 A) Classify manufacturing processes with its example. **(05)**

B) What do you understand by pattern? State the types of pattern and explain any two with neat sketch. **(05)**

C) Explain importance of moulding sand in casting. What is the effect of its constituent on sand casting? **(05)**

Q.2 **Answer the following questions**. (Attempt any three) (Each five mark) **(15)**

A) What do you understand by aspiration in casting? Explain it with its remedies.

B) The metal contracts in volume as it cool in the mould. Discuss the stages in which the contraction of the metal takes place.

C) State the properties that are generally required in moulding sand and calculate the permeability number of sand if it takes1 min 25 s to pass 2000 cm^3 of air at a pressure of 5 gm/cm^2 through the standard sample.

D) Design the pattern for given casting of cylinder.
Diameter of cylinder = 200 mm, Length of cylinder = 300 mm, Shrinkage allowance = 2 % and Machining allowance = 2 mm/side

Q.3 A) State the types of gating system. Explain any two with neat sketch **(07)**

B) Explain the description, causes and prevention of the following casting defects: **(08)**
(i) Scab expansion (ii) Cross-joint (iii) Flash (iv) Hot tears (v) Pinholes

OR

B) Explain Die casting process in detail with suitable product. **(08)**

Q.4 A) Enlist types of machine moulding process. Explain any two with its advantages and remedies. **(07)**

OR

A) Explain Investment casting process with example of any industrial product. **(07)**

B) Which are the various functions of riser? Explain NRL method for riser design. **(08)**