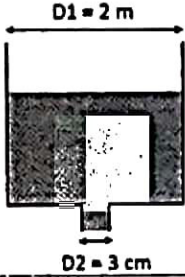


Class Test-1: 12 September, 2019
ME31007: Casting, Forming and Welding
 Time: 45 Minutes. Full Marks: 45
 No. of registered students=181

- Answer Casting, Forming & Welding separately in 3 different answer sheets.
- Write your Name & Roll number on all the 3 sheets.
- No extra sheet will be given
- Assume any data, if required BUT NOT mentioned in the question. Clearly mention your assumption.

Part A Casting (15 marks)		
C1	What is the use of Core, Chaplet and Chills? Show them schematically in a sand casting.	[6]
C2	<p>A ladle with a circular cross-section (diameter 2.0 m) contains 70×10^3 kg molten Al-Si alloy. The Al-Si alloy is teemed through a circular hole in the bottom of ladle. The diameter of the hole is 3.0 cm. Calculate the time required to empty the ladle. Density of Al-Si alloy is 2700 kg/m^3.</p> <div style="text-align: center;">  </div>	[5]
C3	Name at least 4 pattern allowances used in Casting process.	[4]

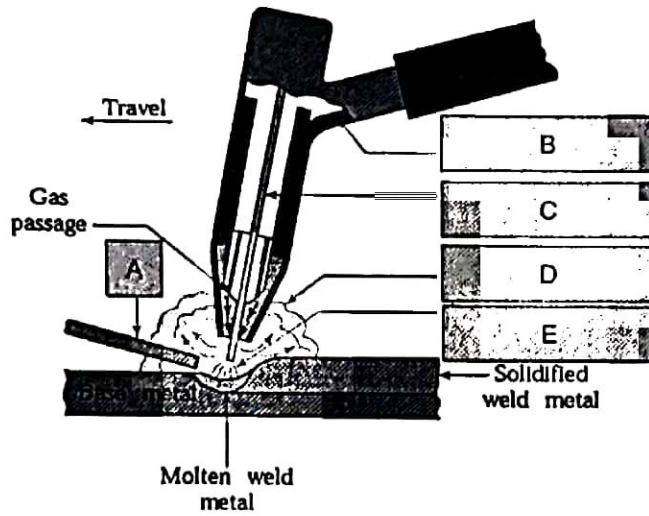
Part B Forming (15 marks)		
F1	Derive pressure distribution in the deformation zone during rolling process without front tension and back tension.	15

Part C Welding (15 marks)		
W1	What is pulsed DC in arc welding? Emphasize its effect on grain structure, arc characteristics and HAZ. What are the constituents in a typical plasma? Arrange the following in the order of increasing arc temperature – SMAW, GMAW, GTAW and PAW.	[5]

W2

Identify the missing labels (A-E) below and what is the name of the process.

[6]



W3

Identify the missing labels (A, B, C) below and what is the name of the process.

[4]

