

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER • 2014****Subject Code: 152103****Date: 03-12-2014****Subject Name: Foundry Technology****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Explain the followings: **07**
(i) Pattern (ii) Mould (iii) Core (iv) Gating Ratio (v) Riser (vi) Chaplet
(vii) Chvorinov's Rule.
- (b)** Differentiate between casting & foundry. Draw neat diagram indicating various steps of operations in foundry unit. **07**
- Q.2 (a)** What is pattern? Explain loose piece pattern and skeleton pattern with neat sketch. **07**
- (b)** Prepare a list of pattern making materials. Explain the factors to be considered for selecting material for pattern making? **07**
- OR**
- (b)** What is core-box? What are different types of core-boxes? Draw figure for each type. **07**
- Q.3 (a)** Explain special additives to moulding sand with their effects on mould or casting. **07**
- (b)** Write a short note on investment casting process. **07**
- OR**
- Q.3 (a)** List different moulding processes. What is the difference between green and dry sand moulding? **07**
- (b)** Explain pressure die casting process. **07**
- Q.4 (a)** Draw a neat sketch of a cupola furnace and indicate various zones and temperatures. **07**
- (b)** What is gating system? With a schematic explain various elements of a gating system. "A proper gating system will produce defect-free casting"-justify. **07**
- OR**
- Q.4 (a)** How do gasses dissolve in molten metal? Discuss the method(s) of removal of gases from liquid aluminium? **07**
- (b)** Discuss N.R.L. method of riser calculation **07**
- Q.5 (a)** Why riser is necessary? Why location of riser is important? With a sketch show types of risers. **07**
- (b)** What is meant by directional solidification? How does it differ from progressive solidification? **07**
- OR**
- Q.5 (a)** What is inoculation Treatment? Why it is necessary? List types of Inoculants used in foundry. **07**
- (b)** Why it is necessary to control the quality of Sand? List different Sand Testing and explain any one in brief. **07**
