Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION - WINTER • 2014

Date: 03-12-2014

Subject Code: 152103

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 **07** steps of operations in foundry unit. **Q.2** (a) What is pattern? Explain loose piece pattern and skeleton pattern with neat **07** sketch. (b) Prepare a list of pattern making materials. Explain the factors to be considered 07 for selecting material for pattern making? **(b)** What is core-box? What are different types of core-boxes? Draw figure for each 07 type. Explain special additives to moulding sand with their effects on mould or 07 Q.3 (a) casting. Write a short note on investment casting process. 07 **(b) Q.3** (a) List different moulding processes. What is the difference between green and dry **07** sand moulding? Explain pressure die casting process. **07 (b)** 0.4 Draw a neat sketch of a cupola furnace and indicate various zones and 07 temperatures. What is gating system? With a schematic explain various elements of a gating **07** system. "A proper gating system will produce defect-free casting"-justify. OR How do gasses dissolve in molten metal? Discuss the method(s) of removal of **Q.4 07** gases from liquid aluminium? Discuss N.R.L. method of riser calculation 07 **(b) Q.5** Why riser is necessary? Why location of riser is important? With a sketch show **07** (a) types of risers. What is meant by directional solidification? How does it differ from progressive **07** solidification? OR **Q.5** What is inoculation Treatment? Why it is necessary? List types of Inoculants **07** used in foundry. Why it is necessary to control the quality of Sand? List different Sand Testing 07 **(b)** and explain any one in brief.
