

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-V • EXAMINATION – WINTER 2013**

**Subject Code: 152103****Date: 04-12-2013****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) Define foundry. Draw neat diagram showing various steps of operations in Foundry unit. **07**
- (b) Explain the advantages of casting over other manufacturing processes and give classification of foundries. **07**
- Q.2** (a) List types of patterns and explain any two with neat sketches. **07**
- (b) What is core? Explain the function of cores? List types of cores and explain core baking briefly. **07**
- OR**
- (b) What is pattern allowance? Why it is necessary? Explain different types of pattern allowances. **07**
- Q.3** (a) Explain in brief the salient features of centrifugal casting process. What are the advantages and limitations of centrifugal casting process? **07**
- (b) What is meant by directional solidification? How does it differ from progressive solidification? **07**
- OR**
- Q.3** (a) How do gases dissolve in molten metal? Discuss the method(s) of removal of gases from liquid Aluminum? **07**
- (b) Give a list of defects caused due to gases in molten metals. **07**
- Q.4** (a) What is the importance of gating design in casting practice? **07**
- (b) What are the properties of a moulding sand? **07**
- OR**
- Q.4** (a) Explain the sequence of operations of melting in a cupola furnace. **07**
- Q.4** (b) Give comparison between induction furnace and cupola furnace **07**
- Q.5** (a) What is the role of inoculant in the foundry practice. List common inoculants used in foundry. **07**
- (b) Discuss Pressure Die-Casting Process. **07**
- OR**
- Q.5** (a) Why it is necessary to control the quality of Sand. List different Sand Testing and explain any one in brief. **07**
- (b) Explain CO<sub>2</sub> mould making technique. **07**

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