Seat No.: _____ Enrolment No._____

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 gasses 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 CO2 mould making technique.	**07**

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