Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – WINTER 2013

Subject Code: 152501 **Date: 27-11-2013**

Subject Name: Casting 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 casting process. Explain the steps involved in making casting with its merits and demerits.	**07**
	(b)	Compare the Casting with other manufacturing processes.	**07**
Q.2	**(a)**	Define Gating system. Discuss various elements of gating system with neat sketch.	**07**
	(b)	What is pattern? Write the advantages and disadvantages of different types of pattern materials.	**07**
		OR	
	(b)	What is the purpose of various pattern allowances? Explain shrinkage allowance, draft allowance, finishing allowance, camber allowance and indicate their value for some of the common metals.	**07**
Q.3	**(a)**	Give the detail classification of foundry sand with its application.	**07**
	(b)	Describe moulding sands. Write in detail about properties of moulding sand. Any five.	**07**
		OR	
Q.3	**(a)**	Explain cupola furnace with neat sketch.	**07**
	(b)	Differentiate between (i) annealing, (ii) normalizing and (iii) tempering of castings.	**07**
Q.4	**(a)**	Explain duties and responsibilities of a foundry engineer	**07**
	(b)	With neat sketch, describe the Investment casting process, its merits-demerits and applications of the process	**07**
		OR	
Q.4	**(a)**	Explain the fettling processes of casting in detail.	**07**
	(b)	Write short note on modernization of foundries.	**07**
Q.5	**(a)**	Give the classification of casting defects. Explain the causes and remedies of surface defects and dimensional defects.	**07**
	(b)	With a neat sketch, give the principle of operation and application of pressure die casting and gravity die casting process.	**07**
		OR	
Q.5	**(a)**	Show the layout for small, medium and large foundry. How does a good layout help in higher productivity and quality in foundry? Explain with an example.	**07**
	(b)	Explain Cost estimation and use of Computers in Foundry shop.	**07**

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