Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-I(New course) • EXAMINATION - WINTER- 2015

Subject Code: 2/11001 Date: 01/01/20 Subject Name: Cryogenic Fundamentals			0
Γime: 2:30 pm to 5:00 pm nstructions: Total Marks: 7		0	
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Explain the significance of the following terms as related to the properties of metals at cryogenic temperatures. i) Strength to weight ratio ii) Strength to thermal conductivity ratio	07
	(b)	·	07
Q.2	(a) (b)		07 07
	(b)		07
Q.3	(a)	Discuss the liquid level measurement method to measure liquid level in horizontal stationary storage tank. Is there different method in case of vertical storage tank?	07
	(b)	Explain the following phenomenon of superconductivity (1) Meissner effect (2) Critical current (3) Critical flux density. OR	07
Q.3	(a) (b)	•	07 07
Q.4	(a)	How cryogenic engineering is useful in nuclear propulsions and chemical propulsions.	07
	(b)	bearing.	07
		OR	
Q.4	(a) (b)	•	07 07

Q.5	(a)	Discuss in brief hazards on account of (i) flammability (ii) high pressure gas	07
		(iii) materials of construction (iv) personal exposure hazards.	
	(b)	Discuss the safety criteria to be considered while handling the cryogens.	07
		OR	
Q.5	(a)	Why safety is necessary at Cryogenic temperature? Explain in brief	07
		Safety measures in Cryogenic industries.	
	(b)	Explain use of cryogenics in blood preservation.	07