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Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

ME - SEMESTER- II(New course) • EXAMINATION (Remedial) - WINTER- 2015

Subject Code: 2722110  Subject Name: Cryogenic Engineering Time: 2:30 pm to 5:00 pm Instructions:  Total Mark		2/2015	
		30 pm to 5:00 pm Total Marks: 70	
	2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	What is Cryogenic? Explain in Brief Application of Cryogenic. Discuss the unusual properties of Liquid Helium óII.	07 07
Q.2	(a) (b)	Give Brief Overview of Cryogenic Insulation used in Cryogenic Equipment. Write Merits and Demerits of following Cryogenic Insulations along with their applications.(1) Evacuated Powder and Fibrous Insulation(2) Foam Insulation.  OR	07 07
	(b)	Explain (1) Superconducting motor (2) Working of Space Simulation Chamber.	07
Q.3	(a)	With a neat Sketch explain the construction and working of chemical rocket engine.	07
	(b)	Explain in brief Pulse tube refrigeration system.  OR	07
Q.3	(a) (b)	Explain with neat sketch Joule Thomson refrigeration system. Explain precooled Linde-Hampson liquefaction system.	07 07
Q.4	(a) (b)	Describe Cascade Liquefaction system.  How Kapitza system and Heylandt system for liquefaction differ from calude system of liquefaction? Show with diagram.  OR	07 07
Q.4	(a) (b)	Discuss phenomenon of superconductivity. Explain: (1) Meissener effect (2) Critical flux density	07 07
Q.5	(a)	Explain the following phenomenon for He.II(1) Fountain effect (2) Second sound (3) Roll in film.	07
	(b)	Explain the thermodynamically ideal system for liquefaction of air and derive an expression for finding liquid yield.	07
0.5	(a)	OR  Evaluin the Cifford Ma Mohan Cryspapalar with next skatch. Also evaluin its	07
Q.5	(a)	Explain the Gifford-Mc Mohan Cryocooler with neat sketch. Also explain its merits and Demerits.	U/
	(b)	Write short note on Cryogenic Vessels.	07

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