Seat N	lo.: _			Enrolment No		
		GUJARAT TECHNOLOGICAL UNIVERSITY				
Cb.	a a 4 . (EMESTER III (NEW) – EXAMINATION – WINTER-2016	VINTER-2016 Date:25/10/2016	
Subject Code: 2731002 Date:25/10 Subject Name: Advanced Cryocoolers					10/2010	
Time	Time: 02:30 pm to 05:00 pm Total M Instructions:					
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.				
		Q.1	(a) (b)	Discuss the importance of different technical parameters in design of cryocooler Discuss the design and operation of two stage G-M cryocooler	07 07	
		Q.2	(a) (b)	Write a short note on new regenerator material properties Describe ideal working cycle for cryocooler and discuss the selection of cryocooler	07 07	
			(b)	Write a short note on miniature stirling cryocooler and linear compressor design.	07	
		Q.3	(a)	Discuss design and optimization of different design parameters for stirling cryocooler	07	
			(b)	Describe the loss analysis of stirling cryocooler OR	07	
		Q.3	(a) (b)	Write a short note on Microgravity dilution refrigerator Discuss the utility of magnetic refrigerator in hydrogen liquefier	07 07	
		Q.4	(a) (b)	Explain working of High frequency Pulse tube cooler Discuss the effect of D. C. Flow and active phase control of stirling type pulse tube cooler	07 07	
		Q.4	(a) (b)	OR Discuss the operations of pulse tube cooler with different geometry Write short note on thermoacoustically driven pulse tube cooler	07 07	
		Q.5	(a) (b)	Describe recent development in mixed gas J-T cooler Describe the working of J-T cooler driven with sorption compressor OR	07 07	
		Q.5	(a)	Discuss the applications of different cryocooler in Space and defense	07	

07

applications

(b) Describe miniature pulse tube cooler for space applications