Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER - VII • EXAMINATION - WINTER 2012

Subject	Nam	: 171407 Date: 28/12/2012 ne: Controlled and Modified Atmosphere Storage Engineering am - 01.00 pm Total Marks: 70	
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Instruc			
2.		mpt any five questions. e suitable assumptions wherever necessary.	
3.		res to the right indicate full marks.	
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Q.1	(a)	Enlist and describe factors responsible for deterioration of durable foods.	07
	(b)	Describe the effects of internal and external environment on barrier properties of film.	07
Q.2	(a)	What are the factors affecting rate of dark respiration? Describe any two factors in detail.	07
	(b)	State various changes taking place during ripening of fruits and vegetables and describe flavor changes.	07
		OR	
	(b)	What do you mean by 'respiratory quotient'? Write a note on respiratory substrates present in fruits and vegetables	07
Q.3	(a)	Give historical background of controlled and modified atmosphere storage as a	07
	(b)	preservation means. Describe how field heat contributes towards deterioration of fruits and vegetables? What are methods used for removal of field heat? OR	07
0.2	(0)		07
Q.3	(a)	Describe how microclimatic requirements for fresh and processed foods are different?	07
	(b)	What is the role of absorbents in CA- MA storage?	07
Q.4	(a)	Explain hermetic sealing, active packaging and passive packaging with suitable examples.	07
	(b)	Describe and scientifically justify 'Pasteur effect' OR	07
Q.4	(a)	Mention the advantages of CA-MA system over traditional storage systems and list the constraints in popularization of CA-MA system.	07
Q.4	(b)	Explain the selective permeability of packaging materials used for modified atmosphere packaging of foods.	07
Q.5	(a)	What do you mean by physiological stress? Give it's types and resistance mechanism	07

(b) What are the effects of either reducing the oxygen concentration or increasing carbon dioxide concentration during controlled atmosphere storage of fruits and

vegetables?

07

Q.5	(a)	Write short notes on following	06
		a. Post harvest losses	
		b. High carbon dioxide Storage	
	(b)	Give scientific basis for following statements	08
		i.Leafy vegetables are having comparatively more shelf life than tubers.	
		ii.RQ value can be used as general indication of type of respiratory substrate	

- being utilized during respiration at specific time.

 iii. Climacteric fruits exhibit irreversible respiratory rise with external application of ethylene.
- iv. Post harvest losses in developed countries are comparatively less than that of developing countries.