

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VII Examination-Nov/Dec.-2011

Subject code: 171407

Date: 29/11/2011

Subject Name: Controlled Atmosphere and Modified Atmosphere Engineering

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) “Modified Atmosphere storage system is in practice since ages.” 07
Justify?
- (b) What are the advantages of Controlled Atmosphere and Modified Atmosphere? Why they have not become popular? 07
- Q.2** (a) Define following terms:
- i. RQ 03
- ii. Q_{10} 02
- iii. Carbon skeleton 02
- (b) Describe with neat sketch the effect of summer season on the grains stored in the deep silo. 07
- OR**
- (b) List the various factors causing deterioration of durables during storage. Describe in detail any two of them. 07
- Q.3** (a) List the various factors causing deterioration of perishables during storage. Describe different method of removing the field heat of perishables. 07
- (b) Write short notes on the following 07
- i. Flavor of CA/MA stored commodities
- ii. Respiratory substrates
- OR**
- Q.3** (a) What do you understand zero head space? In which types of food it is preferred and why? 07
- (b) Discuss is the purpose of keeping perforations in LDPE, PP, OPP and PVC bags used for CA-MA storage? 07
- Q.4** (a) Enlist various effects of decreasing O_2 concentration and increasing CO_2 concentration during CA or MA storage. 07
- (b) What is the role of absorbents in CA- MA storage? 07

OR

- Q.4** **(a)** Explain the effect of external and internal environment on the permeability of films? **07**
- (b)** What is minimal processing? What changes in gas composition required when minimal process fruits are stored in CA- MA instead of intact fruits? Why? **07**
- Q.5** **(a)** Explain with suitable examples hermetic sealing, active packaging and passive packaging. **07**
- (b)** Enlist various changes taking place during ripening and explain any two in detail **07**
- OR**
- Q.5** **(a)** Explain the need of adjustable diffusion leak in reference to CA-MA storage. **07**
- (b)** Explain the purpose and methods of gas flushing in CA storage? Discuss the changes in microclimate required for non-respiring and respiring foods. **07**
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