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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: VI (New)	Term	: II	Academic Year	: 2010-11
Course No.	: HORT 364	Title	: Post-Harvest Management and Value Addition of Fruits and Vegetables		
Credits	: 2 (1+1)				
Day & Date	: Saturday, 23.04.2011	Time	: 09.00 to 11.00	Total Marks	: 40

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 What do you mean by postharvest technology? Describe in brief the scope and importance of postharvest technology with suitable examples.
- Q.2 Define horticultural maturity. Describe maturity indices of sapota and onion.
- Q.3 Enlist the different methods of storage of fruits and vegetables. Write in brief about Controlled Atmospheric Storage.
- Q.4 Describe the importance of packaging. Enlist different packaging materials.
- Q.5 Write short notes (Any two):
- 1) Important considerations in jelly making.
 - 2) Preservation by irradiation
 - 3) Modified Atmospheric Packaging.
- Q.6 Which are the methods of preservation of fruits and vegetables? Describe preservation by salt.
- Q.7 Define ripening. Write in brief about the important physiochemical changes that take place during ripening of fruits.
- Q.8 What are the different pre-harvest factors affecting post harvest quality of fruits and vegetables. Write in brief about the environmental factors.
- Q.9 Explain in brief about the points to be considered while selecting the site for fruit and vegetable processing unit.
- Q.10 Enlist different agencies responsible for spoilage of fruits and vegetables. Describe in brief about enzymatic spoilage.

SECTION "B"

- Q.11 Fill in the blanks with appropriate words.
- 1) _____ is the ideal means of removing field heat immediately after the harvest of fruits and vegetables.
 - 2) _____ is accomplished to reduce the rate of respiration and to enhance the product gloss.

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- 3) Decomposition of carbohydrates by microorganism or enzymes is called as _____.
- 4) Fruit or vegetable impregnated with cane sugar and subsequently drained free of syrup and dried, is known as _____.

Q.12 Define the following terms:

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- 1) Denaturation
- 2) Crystallized fruits
- 3) Preservative
- 4) Carbonation



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B.Sc. (Agri.)

Semester : VI (New)	Term : II	Academic Year : 2011-12
Course No. : HORT 364	Title : Post-Harvest Management and Value Addition of Fruits and Vegetables	
Credits : 2 (1+1)	Time : 09.00 to 11.00	Total Marks : 40
Day & Date : Friday, 27.04.2012		

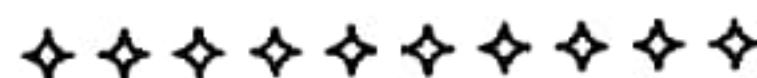
- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Define post-harvest technology and write its importance with suitable examples.
- Q.2 Define horticultural maturity. Describe maturity indices of banana and muskmelon.
- Q.3 What is ripening? Describe natural factors affecting ripening of fruits and vegetables.
- Q.4 Write different pre-harvest cultural factors affecting on post-harvest quality of fruits and vegetables.
- Q.5 Which are the chemicals used for hastening the ripening of fruits and vegetables.
- Q.6 Enlist the methods of storage of fruits and vegetables. Describe zero energy cool chamber.
- Q.7 Write the advantages of fruit and vegetable preservation.
- Q.8 Enlist the methods of preservation of fruits and vegetables. Describe preservation by carbonation.
- Q.9 Write the chemical and physical spoilage of canned products.
- Q.10 Write short notes (Any Two)
- 1) Structural changes during ripening
 - 2) Preservation by irradiation
 - 3) Controlled atmosphere packaging (CAP)

SECTION "B"

- Q.11 Define the following terms.
- 1) Computation
 - 2) Crystallized fruits
 - 3) Degreening
 - 4) Curing
- Q.12 Fill in the blanks.
- 1) _____ means preventing the entry of micro organisms by maintaining of general cleanliness.
 - 2) A mild swell at one or both ends of a can is called _____.
 - 3) _____ cans used for filling of non-acidic products of fruits and vegetables.
 - 4) _____ is accomplished to reduce the rate of respiration and to enhance products glossiness.



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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester : VI (New)	Term : II	Academic Year : 2012-13
Course No. : HORT 364	Title : Post-Harvest Management and Value Addition of Fruits and Vegetables	
Credits : 2 (1+1)	Time : 09.00 to 11.00	Total Marks : 40
Day & Date : Saturday, 20.04.2013		

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Write in brief the importance and scope of fruit and vegetable preservation in India.
- Q.2 Explain in brief the factors responsible for deterioration of harvested fruits and vegetables.
- Q.3 Enlist the different post harvest handling operations of fruits and vegetables.
- Q.4 Explain in brief the points to be considered while selecting the site for fruit and vegetable preservation unit.
- Q.5 Give the principles of preservation and describe the chemical method of preservation.
- Q.6 Write short notes on (Any Two)
- 1) CA storage
 - 2) Chemicals used to delay ripening
 - 3) Packaging of fruits and vegetables
- Q.7 Describe in brief the changes during ripening of fruits.
- Q.8 Define precooling. Enlist the different methods of precooling.
- Q.9 Define fermentation and describe acetic acid fermentation.
- Q.10 Define canning and give the flow sheet of canning process for fruits.

SECTION "B"

- Q.11 Define the following terms.
- 1) Ripening
 - 2) Exhausting
 - 3) Blanching
 - 4) Horticultural maturity
- Q.12 Do as directed.
- 1) Name two methods for fruit and vegetable storage.
 - 2) Criteria (indice) for judging the maturity of aonla.
 - 3) In which crop neck fall is considered as indication of maturity.
 - 4) Name two non-climacteric fruits.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester : VI (New)	Term : II	Academic Year : 2013-14
Course No. : HORT 364	Title : Post-Harvest Management and Value Addition of Fruits and Vegetables	
Credits : 2 (1+1)	Time : 09.00 to 11.00	Total Marks : 40
Day & Date : Friday, 02.05.2014		

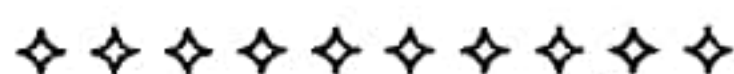
- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Describe different types of maturity indices to judge the maturity of fruits and vegetables with examples.
- Q.2 Define ripening. Write in brief important physico-chemical changes occurring during ripening.
- Q.3 What are the different pre-harvest factors affecting post harvest quality of fruits and vegetable. Write in brief environmental factors.
- Q.4 Write in brief on importance and scope of fruit and vegetable preservation industry in India.
- Q.5 Enlist different methods of preservation of fruits and vegetables. Describe preservation by salt.
- Q.6 Write the procedure for preparation of jelly from guava fruits.
- Q.7 Enlist different factors responsible for spoilage of fruits and vegetables. Describe in brief the enzymatic spoilage of fruits and vegetables.
- Q.8 Write short notes on (Any Two)
- 1) Methods for hastening and delaying ripening process
 - 2) Methods of storage of fruits and vegetables
 - 3) Importance of packaging material
- Q.9 Comment on quality control of processed products.
- Q.10 Enlist different pack house operations and write in detail about grading of horticultural crops.

SECTION "B"

- Q.11 Define the following terms.
- 1) Maturity
 - 2) Respiration
 - 3) Senescence
 - 4) Post Harvest Technology
- Q.12 Fill in the blanks.
- 1) As per FPO specification, percentage of TSS (W/W) in the final product of preserve should be _____.
 - 2) Respiratory quotient (R.Q.) of fat is _____.
 - 3) Zero Energy Cool chamber is based on the principle of _____.
 - 4) In _____ neck fall is considered as indication of maturity.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester : VI (New)	Term : II	Academic Year : 2014-15
Course No. : HORT 364	Title : Post-Harvest Management and Value Addition of Fruits and Vegetables	
Credits : 2 (1+1)		
Day & Date : Wednesday, 13.05.2015	Time : 09.00 to 11.00	Total Marks : 40

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.



SECTION "A"

- Q.1 Explain in brief the importance of post harvest technology of horticultural crops in India.
- Q.2 How to judge the maturity of fruits and vegetables? Explain in brief maturity signs of sapota and watermelon.
- Q.3 Define the term ripening. Describe different factors affecting ripening of fruits and vegetables.
- Q.4 Describe different pre-harvest cultural factors affecting on post harvest quality of fruits and vegetables.
- Q.5 State the primary factors responsible for deterioration of harvested fruits and vegetables.
- Q.6 Enlist the different methods of storage of fruits and vegetables. Explain in brief controlled atmospheric storage.
- Q.7 Enlist the different methods of preservation of fruits and vegetables. Describe in brief method of preservation by fermentation.
- Q.8 Write short notes on (Any two).
- 1) International standards of packaging
 - 2) Selection of site for preservation unit
 - 3) Scope of fruit and vegetable preservation in India.
- Q.9 Explain the spoilage of canned products due to microorganisms.
- Q.10 Write in details the procedure for preparation of Papaya jam.

SECTION "B"

- Q.11 Define the following terms.
- 1) Horticultural maturity
 - 2) Shelf life
 - 3) De-greening
 - 4) Packaging
- Q.12 Do as directed.
- 1) _____ is the ratio of CO₂ released and O₂ intake (Fill in the blank).
 - 2) Na-Benzoate/Citric acid is suitable preservative for red coloured product. (Choose the correct word).
 - 3) Give the two examples of climacteric fruits.
 - 4) If pressure gauge shows no vacuum inside a can it is called as "Breather". (State True or False.).

