

M.Tech. Food Technology (Semester II Examination 2019)**Course Code: MFTC-202****Paper Title: Technology of Fruits & Vegetables****Time: 3 hours****Max Marks: 75****Read the instructions carefully. Marks are mentioned against each question****Q1. Answer each of the following in one line/one word. (1 x 15)**

- k. What is detartarization?
- l. List out any two of each climatic and non - climacteric fruits.
- m. Enlist any two low cost storage structures.
- n. What is black neck defect?
- o. List out important chemical preservatives under the PFA rules/norw Food Safety Act of India.
- p. Define weeping jelly?
- q. Differentiate between Acid and Sulphur resistant lacquer.
- r. What is physiological maturity?
- s. Distinguish between drying and dehydration.
- t. How is fruit juice powder made?
- u. Define exhausting.
- v. Name two packaging materials used for fresh produce.
- w. Distinguish between conduction and convection.
- x. Expand: RTS, PET
- y. What is blanching?

Q2. Attempt any three of the following (5 X 3)

- (a) Write briefly about artificial ripening techniques used for fruits.
- (b) Give an account of packing house operations for fruits and vegetables.
- (c) What are indirect and direct contact freezing systems?
- (d) What is IQF? Draw flow sheet for IQF for peas.
- (e) Describe the role of temperature and surface area in drying of fruits and vegetables.

Q3. Attempt any three of the following (5 X 3)

- (a) Mention limitations of vacuum packaged fruits and vegetables.
- (b) Explain any two: Freeze injury, Recrystallization, Cryoinjury
- (c) What are curing and degreening? How are they important in post harvest operations?
- (d) Mention ways to determine end point in jam formation.
- (e) What are the different treatments to extend the storage life of fruits and vegetables?

Q4. Attempt any three of the following (5 X 3)

- (a) Explain: Problems in Jam & Jelly making
- (b) What are the various methods of pre-cooling?
- (c) Describe the procedure for drying of fruit/vegetable with the help of a flow chart
- (d) Describe spoilage which may occur in canned fruits and vegetables due to physical and chemical changes?
- (e) Write short note on any two:
 - i. Evaporative cooling
 - ii. Maturity indices
 - iii. Pusa Zero energy chamber

Q5. Attempt any three of the following

(5 X 3)

- (a) Illustrate process of making tomato puree and tomato ketchup using flow sheet.
 - (b) Describe the preparation of apple juice through a flow chart.
 - (c) Give a flow chart for preparation of mango pickle.
 - (d) Differentiate between Controlled atmosphere storage and modified atmosphere storage.
 - (e) Differentiate between fruit jam and fruit jelly.
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