Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14FP2008** | **Duration :** | **3hrs** |
| **Sub. Name :** | **FRUIT AND VEGETABLE PROCESSING TECHNOLOGY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | | **Course**  **Outcome** | **Marks** |
| 1. | a. | List the different factors causing spoilage in vegetables and fruits. | | CO1 | 10 |
| b. | Pre-cooling is beingcommonly used as a pre-treatment/pre-processing technique in many fruit and vegetable processing units. Evaluate the need for pre-cooling of fruits and vegetables prior to their processing and detail the various pre-cooling techniques followed in such industries. | | CO3 | 10 |
| (OR) | | | | | |
| 2. | a. | Post Harvest handling of fruits and vegetables sometimes involves certain specific and specialized unit operations. Discuss the following special operations w.r.t to their principles, working and operational requirement. i.Degreening ii. Controlled ripening iii. Sprout suppression | CO1 | | 10 |
| b. | Categorise the modern methods of food preservation. (give example for each category and sub-category of methods) | CO1 | | 10 |
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| 3. | a. | IIlustrate the process of canning for apples with the help of a suitable flow chart. Try to hypothese the different equipments that can be used in the canning processing and the flow of the process. | CO3 | | 10 |
| b. | Report the tests that can be conducted on jellies especially to determine its pectin content w.r.t jelly stability | CO2 | | 10 |
| (OR) | | | | | |
| 4. | a. | Summarise the various equipments and unit operations employed in the manufacture of fruit squash. | CO2 | | 10 |
| b. | Describe the various types of blanching methods for vegetables. Identify the significance for each methods. | CO1 | | 10 |
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| 5. | a. | Discuss the various mechanisms of hurdle technology and how hurdle technology works. | CO3 | | 10 |
| b. | Categorise the types of centrifuge and their working principle. | CO1 | | 10 |
| (OR) | | | | | |
| 6. | a. | Explain the principle behind aroma recovery and draw a schematic diagram of a generalized aroma recovery system. | CO3 | | 10 |
| b. | Illustrate the manufacturing processing of tomato ketchup. | CO2 | | 10 |
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| 7. | a. | List the advantages of converting a fruit juice into a fruit concentrate and describe any two types of evaporators that can be used for this unit operation of concentrating the fruit juices. | CO2 | | 10 |
| b. | Illustrate the construction and working of a freeze dryers. List its merits and demerits. | CO1 | | 10 |
| (OR) | | | | | |
| 8. | a. | Illustrate the working principle of Spray dryer. | CO3 | | 10 |
| b. | State the principle behind providing vaccum in a vaccum shelf dryer. Write a brief note on the working of a vaccum shelf dryer. | CO1 | | 10 |
|  | | **Compulsory**: |  | |  |
| 9. | a. | Write an exhaustive note on the Aseptic processing. | CO3 | | 10 |
| b. | Discuss the various aspects of the minimal processing of fruits and vegetables. | CO3 | | 10 |