

***DVAPFV***

**ASSIGNMENT BOOKLET  
for  
Academic Year 2023**

**DIPLOMA IN VALUE ADDED PRODUCTS FROM FRUITS  
AND VEGETABLES (DVAPFV)**

**Note:** First of all read the assignment/questions and instructions carefully and identify the components of an assignment. You should read the relevant sections and sub-sections of a unit while preparing your responses and write answers in your own words. Your responses should not be a verbatim reproduction of the textual materials/blocks provided for self-learning purposes. We also suggest that, you may read additional materials available in your study centre or in any other library before preparing your responses. But extra reading is not a must to answer these assignments.



**School of Agriculture  
Indira Gandhi National Open University  
New Delhi -110068  
2023**

Dear student,

Welcome to the “Diploma in Value Added Products from Fruits and Vegetables” (DVAPFV) programme. We hope that you have gone through the Programme Guide of DVAPFV programme carefully. It is extremely important to complete the assignments within the stipulated time to be eligible to appear for the term-end examination. All the assignments of DVAPFV programme are Tutor Marked Assignments (TMAs) and are part of the continuous evaluation process. The weightage to the Term-End Examination (TEE) will be 80% and Continuous Assessment (Assignment) will be 20%. There is one assignment for each course [Except BNRP-108½] with theory component, thus, a total of seven assignments for this programme. Each assignment will be of 50 marks which will be converted to have weightage of 20% of theory component.

### Instructions to format your assignments

1. Before you write the assignments, read the instructions provided in the Programme Guide carefully and go through the course materials.
2. You are requested to go through the course material first and then complete the assignments. Your answers should not be a verbatim reproduction of the textual materials/blocks provided for self-learning purposes.
3. Use foolscap size paper for writing your answer. Leave 4 cm margin on the top, bottom and left of your answer sheet. Clearly indicate question no. and part of the question being solved while writing answers.
4. The Assignments should be sent or submitted to the Programme In-charge (PIC) of the Study Centre allotted to you.
5. We strongly suggest that you should retain a copy of your assignment responses.
6. On top of the first page of your answer sheet, please write the details exactly in the following format.

Enrollment no: .....  
Name: .....  
Address: .....  
.....  
.....

Course Code: .....

Course Title: .....

Study Centre: .....

Date: .....

(Name and Code)

7. If you have any doubts or problems pertaining to the courses and assignments, do feel free to contact us at the School of Agriculture.

**Please submit your assignments at the Study Centre allotted to you before the due date as mentioned below:**

Course Code	Last Date for January 2023 Session	Last Date for July 2023 Session
BPVI-001 and BPVI-002	31 <sup>st</sup> May 2023	31 <sup>st</sup> October 2023
BPVI-003 and BPVI-004	31 <sup>st</sup> July 2023	31 <sup>st</sup> December 2023
BPVI-005 and BPVI-006	31 <sup>st</sup> August 2023	31 January 2023
BPVI-007 and BPVI-008	25 <sup>th</sup> September 2023	28 <sup>th</sup> February 2023

Happy Learning! Wish you all good luck for successful completion of the programme.

**School of Agriculture**  
*Indira Gandhi National Open University,  
Maidan Garhi, New Delhi-110068, India.*

## **BPVI-001: FOOD FUNDAMENTALS**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. What is nutrition and digestion? Explain the needs of essential nutrient for human beings. Describe the digestive process.
2. Describe the major food processing sectors their problems and prospects.
3. Describe the packaging for fresh fruit and vegetables and processed products.
4. What is food deterioration? Explain the major factors affecting food deterioration. Describe the major types of spoilage of foods.
5. Explain the importance of processing of fruits and vegetables. Describe the by-products of horticultural produces and their possible uses.

## **BPVI-002: PRINCIPLES OF POST HARVEST MANAGEMENT OF FRUITS AND VEGETABLES**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Define maturity. Differentiate between physical and commercial maturity. Describe the different methods for determination of maturity of fruits and vegetables.
2. Enlist the different mode of transport for fresh horticultural commodity. Explain the various factors affecting transportation of fresh produce.
3. What is pre-cooling and describe its importance? Explain methods of pre-cooling.
4. Write principles of storage. Explain the factors affecting storage life. Enlist the low-cost storage structures used in rural areas.
5. Define dehydration. Explain theories of drying and dehydration. What are the advantages of dehydrated fruits and vegetables? Enlist common types of driers used for drying of fruits and vegetables.

## **BPVI-003: Food Chemistry and Physiology**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Explain the post-harvest physiology of fruits and vegetables. Describe the compositional changes occur during growth and ripening.
2. What is vitamin? Explain its role in human body. Differentiate between water soluble and fat-soluble vitamins.

3. What is chilling injury? Describe control of chilling injury. Differentiate between low temperature and high temperature disorders.
4. Define fermentation. Describe nutritional values of fermented foods. Give classification of fermented foods.
5. Explain in detail the technology of vinegar production by fermentation.

### **BPVI-004: Food Processing and Engineering-I**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Describe equilibrium moisture content (EMC). Write its relevance to food preservation.
2. Explain the importance of storage and requirements of storage. Write its advantages.
3. What is size reduction? Describe the principles and methods of size reduction.
4. Explain the factors influence dehydration. Describe drying rate curves.
5. What is Plant Layout? Write advantages of Good Plant Layout.

### **BPVI-005: Food Microbiology**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. What is enzyme? Write the properties of enzymes. Define fermentation. Describe the types of fermentation.
2. Explain the principles of food preservation. Classify the foods based on perishability.
3. Describe the classification of foods according to pH. Define thermal death point (TDP). Explain the procedure of its determination.
4. Describe conditions necessary for an outbreak of botulism.
5. Explain the characteristics of chemical preservatives of food. Write general rules for chemical preservation.

### **BPVI-006: Food Processing and Engineering-II**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Describe heat transfer systems with suitable examples.
2. Explain the effect of water activity on microbial growth and survival.

3. Write the beneficial effects of CA storage. Explain the methods of creating modified atmosphere conditions.
4. What are the fruits and vegetables wastes. Describe the by-products from fruit and vegetable wastes.
5. What is packaging? Describe its functions and types.

### **BPVI-007: Food Quality Testing and Evaluation**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Write definition of food quality. Explain the Classification of quality attributes.
2. What are Good Manufacturing Practices (GMP)? Describe Requirements for GMP for Food Industry.
3. What is texture? Describe the different parts of the texture measuring instruments/ devices.
4. Write definition of Sensory analysis. Explain the factors causing bias in sensory tests.
5. Describe the main agencies and institutions involved in formulation and implementation of standards for the quality of foods.

### **BPVI-008: Entrepreneurship and Marketing**

**Maximum Marks: 50**

**Note: Answer all questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Explain the need for entrepreneurship. Write the benefits of self-employment.
2. Explain how to assess market for any business idea? What constitutes the market for your business idea, explain.
3. Discuss the meaning of marketing mix. Write its importance.
4. What is direct or indirect distribution? Explain the types of intermediaries.
5. Explain the meaning of growth and its measures. Discuss the stages of growth and challenges faced by the entrepreneurs.