

# **ASSIGNMENT BOOKLET**

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

**Academic Session: 2011**



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

Dear student,

As you are aware that for theory, the weightage to the term-end examination will be 80% and the weightage to the continuous assessment will be 20%. The continuous assessment is in form of assignments. There is one assignment for each course i.e. total eight assignments for the programme. Each assignment will be of 50 marks, which ultimately will be converted to have weightage of 20% of theory. Instructions to format your assignments are as follows:

### Instructions to format your assignments

Before attempting the assignments, please read the following instructions carefully.

1. On top of the first page of your answer sheet, please write the details exactly in the following format.

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Enrollment no:.....  
Name:.....  
Address:.....  
.....  
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Course Code:.....  
Course Title:.....  
Study Centre:.....  
Date:.....  
(Name and Code)

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**Please follow the above format strictly to facilitate evaluation and to avoid delay.**

2. Use foolscap size paper for writing your answer.
3. Leave 4cm margin on the top, bottom and left of your answer sheet.
4. Clearly indicate question no. and part of the question being solved while writing answers.

Assignment No.	Date of Submission
Assignment 1 (BPVI-001) and 2 (BPVI-002)	Before 31 <sup>st</sup> March
Assignment 3 (BPVI-003) and 4 (BPVI-004)	Before 31 <sup>st</sup> May
Assignment 5 (BPVI-005) and 6 (BPVI-006)	Before 31 <sup>st</sup> July
Assignment 7 (BPVI-007) and 8 (BPVI-008)	Before 30 <sup>th</sup> September

5. Assignments have to be sent to the coordinator of your study centre.
6. **We strongly suggest that you should retain a copy of your assignment responses.**

Wishing you good luck.

**Assignment – 1**  
**Course Code: BPVI – 001**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1 Discuss the major properties of food. (10)
- Q.2 What do you understand by Food Standards? Explain the role of PFA and Codex in implementing Food Standards. (10)
- Q.3 a) Discuss the nutritional importance of milk and explain the important steps in clean milk production. (5)
- b) What are the major spices grown in India. Discuss different products and by-products of Tamrind. (5)
- Q.4 (a) Describe different techniques used for assessment of human nutrition. (5)
- (b) Discuss the effect of thermal processing on degradation of nutrients, colour pigments and microorganisms in food. (5)
- Q.5 a) What is HACCP? Write its advantages and principles. (5)
- b) Discuss food adulteration and contamination and their control. (5)

**Assignment – 2**  
**Course Code: BPVI – 002**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. Outline maturity indices of important Fruits and Vegetables and explain the merits and demerits of hand and mechanical harvesting. (10)
- Q.2. Discuss different pre-harvesting factors which effect the post harvest losses and how these losses can be prevented? (10)
- Q.3. Describe in detail different post harvest treatments given to fruits and vegetables. (10)
- Q.4. a) Discuss different factors affecting storage life of Fruits and Vegetables. (5)
- b) What are the different criteria on the basis of which markets can be classified? (5)
- Q.5. What are different methods of freezing? Write advantages and disadvantages of the each. (10)

**Assignment – 3**  
**Course Code: BPVI – 003**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. a) What is balanced diet and how the knowledge of Food Chemistry is helpful in selecting balance diet and nutrition labeling? (5)
- b) Explain different compositional changes taking place during growth and ripening of Fruits. (5)
- Q.2. a) How proteins are classified? Explain the differences between plant and animal proteins. (5)
- b) Explain the relation between water activity and food spoilage. (5)
- Q.3. a) What are preservatives and how these are classified? Explain biologically derived antimicrobials. (5)
- b) What is the role of ethylene in post harvest life of horticultural products and how ethylene effect differ in climacteric and non-climacteric fruits . (5)
- Q.4. Discuss physicochemical changes during growth and storage of organs. (10)
- Q.5. a) Describe the technology of vinegar production by fermentation. (5)
- b) Explain how wine is produced from apples, custard, pear, mango and Jamun. (5)

**Assignment – 4**  
**Course Code: BPVI – 004**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. a) Explain the components of refrigeration system, cooling load and coefficient of performance. (5)
- b) Discuss different types of evaporators with merits and demerits of each. (5)
- Q.2. Describe different methods of size reduction and enlist different characteristic, of an ideal size reducing machine. (10)
- Q.3. a) Describe different transportation containers used for food products. (5)
- b) Discuss regarding the equipments used for the production of juice and pulps. (5)
- Q.4. Explain the role of sugar in food systems and discuss different types of sugar available for use in food products. (10)
- Q.5. Discuss general guidelines for layout of a fruit and vegetable processing plant. (10)

**Assignment – 5**  
**Course Code: BPVI – 005**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. Describe different steps in the preparation of beer and vinegar. (10)
- Q.2. Describe the factors which govern the spoilage of food and causes chemical and physical changes in it due to spoilage. (10)
- Q.3. What are food additives and what are their functions? (10)
- Q.4. a) Discuss non-bacterial food borne disease causing agents. (5)  
b) What are food borne parasites and what are the symptoms of the diseases caused by these? (5)
- Q.5. a) Write the characteristics and classification of chemical preservatives. (5)  
b) Write the sources and factors affecting the number of microorganisms on fresh Fruits and Vegetables. (5)

**Assignment – 6**  
**Course Code: BPVI – 006**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. a) Explain three heat transfer systems and the conditions where each of these is best suited. (5)  
b) Describe microwave and ohmic heating. (5)
- Q.2. a) Define water activity and describe its effect on enzyme reactions and on non-enzymatic browning reactions. (5)  
b) Describe different methods of evaporation. (5)
- Q.3. Differentiate between controlled atmosphere and modified atmosphere storage. Give the physiological basis, effects and commercial applications of CA storage. (10)
- Q.4. Write how different Fruits and Vegetables are fortified. (10)
- Q.5. Discuss the advantages and disadvantages of different packaging material. (10)

**Assignment – 7**  
**Course Code: BPVI – 007**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. a) Define food quality and describe its attributes. (5)  
b) Describe different food legislations of India. (5)
- Q.2. a) Describe GMP and HACCP and write the requirements of GMP and Principles of HACCP? (5)  
b) Define colour and explain Hunter colour meter. (5)
- Q.3. a) Describe in detail how protein is estimated in food products. (5)  
b) Discuss different sensory test methods. (5)
- Q.4. Define chromatography and give its classification and principle of different methods of chromatography. (10)
- Q.5. List different instruments based on electromagnetic radiation write properties of EMR and discuss in detail the working of an Abbes refractometer. (10)

**Assignment – 8**  
**Course Code: BPVI – 008**

**Maximum Marks – 50**

**Note: Attempt all the questions.**

- Q.1. a) What are the must have skills of an entrepreneur? (5)  
b) What strategy is adopted to bring desirable changes in the mind set of an entrepreneur through training? (5)
- Q.2. Explain various concepts of marketing and how the market is assessed for the start of a business? (10)
- Q.3. What decisions concerning marketing mix are involved in the product area? (10)
- Q.4. What are the functions of branding and packaging of a products? (10)
- Q.5. What an entrepreneur should know about his customer, competitors and trade practices before fixing the cost of his products? (10)