SEMESTER – 4

COURSE CODE: BPVC-106

COURSE TITLE: PROCESSING OF AGRICULTURAL PRODUCE

Attempt both parts of the assignment. **Maximum Marks: 100**

PART – A: ASSIGNMENTS

Attempt all questions. All questions carry equal marks. Write your answers in about 500 words. **Marks: 5x10=50**

1. A household finds that vegetables purchased for weekly use are becoming soft, discoloured and mouldy within a few days, resulting in considerable food wastage. Identify the likely causes of deterioration and propose a suitable food processing or preservation strategy to address the problem. Justify your choice based on the principles of food preservation, expected effects on shelf life and food quality. 10
2. Analyze the nutritional value of fermented foods and evaluate their significance in promoting human health and well-being. Examine the diverse nutritional and physiological mechanisms through which beneficial microorganisms in fermented foods contribute to human health. 10
3. Discuss the complete paddy milling process. Explain the process of parboiling of paddy and evaluate its effects on milling performance, nutritional quality and characteristics of rice. 10
4. Differentiate between Soy Milk and Tofu. Explain their methods of preparation. Critically evaluate the nutritional significance of full-fat soy flour and assess its suitability for different food applications. 10
5. Describe the wet method of coffee processing with a suitable flow chart and explain the requirements of an ideal coffee mill. 10

PART – B: ACTIVITIES

Perform all activities. Submit the evidence (activities notebook, charts etc.) of any FIVE Activities. For details, kindly refer to Block 6: Activities Manual. **Marks: 5x10=50**

Activity 1: Study the consumption pattern of fermented fruits and vegetable products.

Activity 2: Study the millet /coarse grain consumption pattern.

Activity 3: Visit to a nearby KVIC/Kendriya Bhandar/TRIFED store and prepare a list of available products from cereals/millets/pulses.

Activity 4: Visit to a nearby flour mill and write a report on the milling process of wheat/paddy followed there in details.

Activity 5: Identify locally prepared fermented fruits and vegetable products and study the science of preparation.

Activity 6: Prepare one fruit/vegetable based fermented product at home.

Activity 7: Prepare a 10-minute video on different coconut products available in the nearby market/locality.

Activity 8: Prepare a physical map of India and mark the places which are known for spice production.

NOTE:
For the assignment questions of other generic courses you have opted for in the 4th semester i.e., **Minor Discipline Specific Course, and Skill Enhancement Course (SEC),** kindly download them (search course codes in the format e.g. BCOS-185, select the correct session and download them) from the assignment section of the IGNOU website (https://www.ignou.ac.in/studentService/download/assignments).

1. A household finds that vegetables purchased for weekly use are becoming soft, discoloured and mouldy within a few days, resulting in considerable food wastage. Identify the likely causes of deterioration and propose a suitable food processing or preservation strategy to address the problem. Justify your choice based on the principles of food preservation, expected effects on shelf life and food quality. (10)

Answer

Fresh vegetables remain living tissues after harvest. They continue to respire, lose water and respond to temperature and handling. Therefore, vegetables that appear fresh in the market may become soft and mouldy within a week if stored incorrectly. In this household, the rapid changes suggest a combination of physiological deterioration, microbial spoilage and unsuitable storage conditions rather than one single cause.

Likely causes of deterioration

First, loss of moisture by transpiration makes leafy vegetables, beans and other tender produce wilt and lose crispness. Warm air, low relative humidity and direct sunlight speed up this loss. Second, respiration consumes stored sugars and organic acids. At higher temperatures, respiration and ageing become faster, causing softening, colour changes and loss of flavour. Ethylene released by ripening fruits such as bananas or apples can accelerate ageing in some sensitive vegetables kept beside them.

Third, enzymes within the tissues can cause browning, loss of green colour and changes in texture. Bruises, cuts and crushed surfaces increase enzyme activity and expose nutrients to microorganisms. Fungi and bacteria introduced through soil, dirty water, wet bags or infected vegetables grow especially quickly on