SEMESTER – 5

COURSE CODE: BPVC-108

COURSE TITLE: FOOD SAFETY AND QUALITY MANAGEMENT SYSTEM

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. Explain the three interrelated components of food safety risk analysis and discuss how they collectively support science-based decision-making and consumer health protection. 10
2. Explain how the principles and objectives of Good Agricultural Practices (GAP) can be applied to address food safety risks and promote sustainable agriculture. 10
3. Apply HACCP principles to guava juice processing and determine how critical limits, monitoring, validation and verification can be used to control identified food safety hazards. 10
4. A frozen food warehouse experiences a sudden refrigeration failure. As a food safety team member, what immediate actions would you recommend to protect the safety of the stored products? 10
5. Explain the classification, collection, segregation and disposal of food industry wastes, and discuss how these practices promote food safety and environmental sustainability. 10

PART – B: ACTIVITIES

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

Activity 1: Identify biological, physical, chemical, and allergen hazards during processing of a food product.

Activity 2: Prepare a risk assessment chart for a food safety hazard.

Activity 3: Prepare a HACCP flowchart for apple juice or liquid milk processing.

Activity 4: Prepare a chart depicting food hygienic practices.

Activity 5: Prepare a chart depicting Good Manufacturing Practices (GMP).

Activity 6: Prepare a sanitation/cleaning schedule for a food processing plant.

Activity 7: Compile and Analyze two food recall cases of processed food products.

Activity 8: Case study on GRAPENET: A digital traceability system for export of grapes.

Activity 9: Visit a food establishment and study its food safety policy.

NOTE:

For the assignment questions of other generic courses you have opted for in the 5th 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. Explain the three interrelated components of food safety risk analysis and discuss how they collectively support science-based decision-making and consumer health protection. **10**

Answer

Food safety risk analysis is a systematic way of understanding hazards in food, choosing suitable controls and explaining decisions to those affected. It is more useful than reacting only after illness occurs because it brings scientific evidence, practical action and public trust into one process. The three interrelated components are risk assessment, risk management and risk communication.

Risk assessment: identifying and estimating the danger

Risk assessment provides the scientific foundation. It asks what harmful agent may be present, how seriously it can affect health and how much exposure consumers may receive. Its four linked steps are hazard identification, hazard characterisation, exposure assessment and risk characterisation. A hazard may be biological, such as Salmonella; chemical, such as pesticide residues; or physical, such as glass fragments. Hazard characterisation examines the nature and severity of harm, sometimes including a dose-response relationship. Exposure assessment considers the amount eaten, contamination levels, frequency of consumption and susceptible groups. Risk characterisation combines this information to estimate the likelihood and seriousness of adverse effects while explaining uncertainty.

For instance, when Salmonella is suspected in ready-to-eat food, investigators examine laboratory findings, manufacturing conditions, consumption patterns and available illness data. They should distinguish the presence of a hazard from the probability that an individual consumer will be harmed. Sampling limitations, changing consumption patterns and incomplete information should be reported rather than hidden.

Risk management: choosing and enforcing controls

Risk management converts scientific findings into decisions. Managers compare control options, public-health benefits, feasibility, costs and legal requirements. Possible actions include strengthening hygiene programmes, introducing validated heat treatment, establishing residue limits, inspecting suppliers, increasing testing, restricting sale or recalling affected batches. Decisions also consider whether controls adequately protect children, pregnant people, older persons and others at greater risk.

Assessment and management have distinct responsibilities but must interact. Assessors explain the evidence and its limitations; managers define the policy