| Date | July 23, 2024 | Maximum Marks | 10 + 50 |
| --- | --- | --- | --- |
| Course Code | BT242AT | Duration | 120 min |
| Sem | IV Semester | Closed Book Offline Quiz and Test – 2 | |
| **Bio Safety Standards and Ethics (Basket course)** | | | |

Answer all questions in Part A & Part B, Answer Part A in first two pages in sequence only

**Part A**

|  | Questions | M | BT-L | CO |
| --- | --- | --- | --- | --- |
| 1 | In food, the term used for disease causing microorganism is referred as \_\_\_\_\_\_\_\_\_\_\_ | 1 | 2 | 3 |
| 2 | Mention the temperature range which is optimum for bacterial growth in food | 1 | 1 | 4 |
| 3 | What is the 6th principle of HACCP ? | 1 | 2 | 3 |
| 4 | Mention the instrument used to multiply the DNA | 1 | 1 | 3 |
| 5 | Mention the allowable concentration of the lead in food as per the FSSAI | 1 | 2 | 3 |
| 6 | Mention any two-food certification followed in the world | 1 | 2 | 3 |
| 7 | Expand the term GAP | 1 | 2 | 4 |
| 8 | People, premises, processes, products and procedures is related to\_\_\_\_\_ | 1 | 3 | 4 |
| 9 | Mention any two examples for microbiological contamination | 1 | 2 | 3 |
| 10 | Mention the number of Licenses issued by FSSAI | 1 | 2 | 3 |

**Part B**

| Sl. No | Questions (Test) | M | BT-L | CO |
| --- | --- | --- | --- | --- |
| 1. | Mention the physical, chemical, and biological hazardous material which contaminate the food. | 10 | 2 | 3 |
| 2 | Expand the term FSSAI, illustrate its functions, importance & type of license issued by them. | 10 | 3 | 3 |
| 3 | Discuss various methods to eliminate the chemical, Biological and physical hazardous materials from food. | 10 | 3 | 3 |
| 4 | Expand the term HACCP and explain in detail the principles of HACCP. | 10 | 3 | 4 |
| 5a | List out the food spoilage microorganisms and explain the diseases caused by them. | 5 | 3 | 4 |
| 5b | Mention the GMP and GLP in maintaining the food hygiene | 5 | 3 | 4 |

BT-L-Blooms Taxonomy, CO-Course Outcomes, M-Marks

| Marks Distribution | Particulars | | CO1 | CO2 | CO3 | CO4 | L1 | L2 | L3 | L4 | L5 | L6 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test | Max Marks | --- | -- | 37 | 24 | 2 | 17 | 41 | --- | --- | -- |

Answer key and scheme

| Date | July 23, 2024 | Maximum Marks | 10 + 50 |
| --- | --- | --- | --- |
| Course Code | BT242AT | Duration | 120 min |
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| **Bio Safety Standards and Ethics (Basket course)** | | | |

Answer all questions in Part A & Part B, Answer Part A in first two pages in sequence only

**Part A**

|  | Questions |  |
| --- | --- | --- |
| 1 | In food, the term used for disease causing microorganism is referred as \_\_\_\_\_\_\_\_\_\_\_ | Pathogen |
| 2 | Mention the temperature range which is optimum for bacterial growth in food | 50 to 600 C |
| 3 | What is the 6th principle of HACCP ? | Establish verification procedure |
| 4 | Mention the instrument used to multiply the DNA | RTPCR |
| 5 | Mention the allowable concentration of the lead in food as per the FSSAI | 2.5 ppm |
| 6 | Mention any two-food certification followed in the world | Halal, Kosher |
| 7 | Expand the term GAP | General Agricultural Practices |
| 8 | People, premises, processes, products and procedures is related to\_\_\_\_\_ | GMP |
| 9 | Mention any two examples for microbiological contamination | Coliform, pseudomonas or other two |
| 10 | Mention the number of Licenses issued by FSSAI | 3 |

**Part B**

| Sl. No | Questions (Test) | M |
| --- | --- | --- |
| 1. | Mention the physical, chemical, and biological hazardous material which contaminate the food. | 10 |
| 2 | Expand the term FSSAI, illustrate its functions, importance & type of license issued by them.  The full form of FSSAI is the **Food Safety and Standards Authority of India.** The organization belongs to the Ministry of Health and Family Welfare of the Indian Government. To ensure that healthy and nutritious foods are accessible to humans, it aims to establish scientific standards for the control, inspection and regulation of the production, storage, selling, distribution and import of foods.  Functions  * Framing of laws to set down food safety standards. * Authorizing standards to accredit labs for food testing. * Providing the Central Government to technical assistance and scientific guidance. * Conducting surveys to obtain food intake and food pollution information. * Spread data to raise awareness regarding food quality. * Conduct training programmes to educate individuals who have been in or want to begin a food business.   **Importance of FSSAI**   * Under the Food and Safety Act of 2006, FSSAI was established. * Its headquarter is located in New Delhi, India. * It has eight regional office which is located in Chandigarh, Delhi, Lucknow, Mumbai, Guwahati, Kolkata, Cochin & Chennai. * There are four referral laboratories and seventy-two local food testing lab for the testing of adulterated products. * The organization has the power to perform chemical research on various firms’ food items. * It also makes progress against businesses that do not ensure the appropriate nutrition & quality of the food items. For example, FSSAI banned Maggi noodles. * FSSAI is allowed to grant licences that conform to its rules and practices to Food Business Operators. * The licence is now compulsory anyone who is in a food company, like a food processor, food trader and owner of a hotel or restaurant.   The three licenses are – FSSAI Basic Registration, FSSAI State license and FSSAI Central License. | 10 |
| 3 | Discuss various methods to eliminate the chemical, Biological and physical hazardous materials from food. | 10 |
| 4 | Expand the term HACCP and explain in detail the principles of HACCP. | 10 |
| 5a | List out the food spoilage microorganisms and explain the diseases caused by them.  Foodborne illnesses may result from any of the following sources:   * **Bacteria:**These may be present in raw and undercooked meat, fish, and poultry; unpasteurized dairy products; contaminated fruits and vegetables; and contaminated drinking water. * **Viruses:** Viruses are transmitted to the body through food contaminated by viral particles. * **Parasites:** Contaminated water and soil can transmit harmful parasites to fresh produce, seafood, meat, poultry, and other foods. * **Prions:** These [infectious](https://www.healthline.com/health/prion-disease) proteins are associated with “[mad cow disease](https://www.healthline.com/health/creutzfeldt-jakob-disease)” and can come from eating parts of cattle, such as the brain tissue. * **Naturally occurring chemicals:**Naturally occurring toxins in mushrooms, staple foods such as corn and cereal, and mold on grains can cause long-term health complications. * **Environmental pollutants:** Byproducts of plastic production and waste management, as well as heavy metals such as lead and mercury found in water and soil, can contaminate foods and lead to foodborne illnesses. | 5 |
| 5b | Mention the GMP and GLP in maintaining the food hygiene   * Five Main Components of Good Manufacturing Practices 5P’S * 10 Principles of GMP | 5 |

BT-L-Blooms Taxonomy, CO-Course Outcomes, M-Marks

| Marks Distribution | Particulars | | CO1 | CO2 | CO3 | CO4 | L1 | L2 | L3 | L4 | L5 | L6 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test | Max Marks | --- | -- | 37 | 24 | 2 | 17 | 41 | --- | --- | -- |