

**Chattogram Veterinary and Animal Sciences University**  
**MS in Food Processing and Engineering Final Examination**  
**July- December Semester 2021**

**Course Title: Risk Assessment and International Food Legislations**

**Course Code: RFL-502**

**Total Marks: 40      Time: 2 hours**

**Answer any four (4) questions. Figures in the right margin indicate full marks.**

1. a. What are the essential elements of sampling? What is the importance's of sampling in food analysis? **5.0**  
b. Why is QMS important? What are the main requirements of ISO 9004? **5.0**
  
2. a. What does BRC stand for in food industry? **5.0**  
b. How many fundamental requirements of BRC? **5.0**
  
3. a. How do you implement GMP in food industry? **5.0**  
b. What are the roles and responsibilities under HACCP? **5.0**
  
4. a. Briefly describe the main activities conducted by NSB. **5.0**  
b. What is the action of UNICEF for food system transformation? **5.0**
  
5. a. Write short notes on: (Any two) **5.0**
  - i. Food adulteration and contamination
  - ii. Halal certification
  - iii. Misbranding of foods  
b. Briefly describe the role & activities conducted by CAB **5.0**

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**Course Title: Advanced Technology of Animal Products**

**Course Code: ATA-502**

**Total Marks: 40      Time: 2 hours**

**Answer any four (4) questions. Figures in the right margin indicate full marks.**

1. a. Describe the anti-mortem and postmortem inspection of carcass. **5.0**  
b. What are the major post mortem changes occur in muscle of meat animals? **5.0**
2. a. Describe the current slaughtering practices used for the poultry. **5.0**  
b. How to evaluate the internal and external quality of egg? **5.0**
3. a. Explain the theories of butter churning process. Illustrate a flow sheet of cheese making process. **5.0**  
b. What kind of chemical changes occur during cheese making? **5.0**
4. a. Write short notes on: (Any two) **5.0**
  - i. Super Chilling
  - ii. Quick freezing
  - iii. Egg powder  
b. How is glazing done in fish? **5.0**
5. a. Describe the quality changes in fish during different stages of handling, transportation, preservation and processing. **5.0**  
b. What is fish protein concentrate (FPC)? How does FPC differ from fish meal? **5.0**

Chattogram Veterinary and Animal Sciences University  
Department of Food Processing and Engineering  
MS in Food Processing and Engineering Final Examination  
July-December Semester Final Examination, 2021  
**Subject Title: Advanced Unit Operations in Process and Food  
Engineering**

**Subject Code: AUP-502**

Total Marks = 40

Time = 60 min

(Figures in the right margin indicate full marks. Answer any **Four** questions, Split answer is not allowed)

1. a) State the law of conservation of mass and energy. Describe in brief the various methods which are usually employed in milk pasteurization treatment. 5
- b) Several types of evaporators are used in the food industry, give a brief discussion of the more common types of the evaporator. 5
2. a) Define pump. Describe the Positive Displacement pump, Centrifugal pumps, and Airlift pump with advantages. 5
- b) Point out the applications of Refractometry in tabular form. 5
3. a) Define Filtrate, Filter medium, and Filter cake. Enlist the objectives of size reduction. 4
- b) Enumerate in brief the basic concept of the following process: 2x3=6
  - i) Evaporation process,
  - ii) Pasteurization process,
  - iii) Suppressed boiling type evaporation.
4. a) Enumerate in brief the concept of commercial sterility. Explain the concept of D, F, and Z values. 5
- b) Define the Contact equilibrium process. Describe the three main different types of commercial evaporative crystallizers. 5
5. Write down the following terms (any four): 2.5x4=10
  - i) Principle of Refractometry,
  - ii) Principle of Flame photometry,
  - iii) Principle of Mass Spectroscopy,
  - iv) Various methods of sampling,
  - v) Principle of atomic absorption spectroscopy.

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**MS in Food Processing and Engineering Final Examination**  
**July- December Semester 2021**  
**Course Title: Fermentation and Food Biotechnology**  
**Course Code: FFB-502**  
**Total Marks: 40      Time: 2 hours**

**Answer any four (4) questions. Figures in the right margin indicate full marks.**

1. a. State the concept of food biotechnology. Categorize foods according to modern biotechnology. **5.0**  
b. Briefly describe the principle of RFLP along with its advantage. **5.0**
  
2. a. What are sensory qualities of food? Describe it briefly. **5.0**  
b. How demography and social changes affect food quality? **5.0**
  
3. a. What are the benefits of SCP? How is SCP produced? **5.0**  
b. What is microbial biomass in fermentation? Which fermentation type is used for baker's yeast production? Describe it briefly. **5.0**
  
4. a. Give an overview about the seed storage proteins. **5.0**  
b. Explain the role of repartitioning agents in quality meat production. **5.0**
  
5. a. Write down the characteristics of an ideal cloning vector. Draw a schematic structure of the most widely used cloning vector in genetic engineering technique. **5.0**  
b. What do you mean by PCR? Describe the principles and procedure of PCR? **5.0**

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**July- December Semester 2021**  
**Course Title: Packaging and Storage Technologies**  
**Course Code: PST-502**  
**Total Marks: 40      Time: 2 hours**

**Answer any four (4) questions. Figures in the right margin indicate full marks.**

1. a. What are the disadvantages of cold storage? Briefly describe the stacking arrangements in store warehouse. **5.0**  
b. What conditions should be maintained while storing cereal grains? **5.0**
  
2. a. What are biochemical changes occur during storage of grain? **5.0**  
b. Briefly describe the preventive & safety measures of stored products. **5.0**
  
3. a. What are the main differences between active packaging and intelligent packaging? **5.0**  
What is defined by permeability of packaging materials? **5.0**  
b. How dairy products are packaged? **5.0**
  
4. a. How many layers does a tetra pack have? Describe it briefly. **5.0**  
b. How is the intelligent packaging changing the trend of food packaging system? **5.0**
  
5. a. Which types of packaging materials are used for microwavable packaging? State the importance of labeling and its requirements. **5.0**  
b. Write short notes on: (Any two) **5.0**
  - i. Precooling
  - ii. Shrink packing
  - iii. Bag and Bulk storage

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July-December Semester Final Examination, 2021

**Subject Code & Title: NFT-502, Novel Food Processing Techniques**

Total Marks = 40

Time = 60 min

(Figures in the right margin indicate full marks. Answer any **Four** questions, Split answers is not allowed)

1. a) Define Organic Farming. Enumerate in brief the minimum requirements for Organic Farming to fulfill its objectives. 5
- b) Describe the microencapsulation of food ingredients with some examples of core and wall materials with the schematic diagram. How does edible coating preserve food? 5
2. a) Define High-pressure processing (HPP) Techniques. Describe the effect of HPP on microbial food safety and food quality. 5
- b) Describe the materials used in edible coating or film formulations with their Functionality. 5
3. a) Enumerate the principles of a pulsed electric field system for food processing with a schematic diagram. Shortly mention the application of pulsed electric field system. 5
- b) Give an overview of the changes that have taken place in food during drying. 5
4. a) Illustrate the factors affecting mass transfer during osmotic dehydration of fruit. 5
- b) Define Osmotic Membrane Distillation. Also, mention some applications of Osmotic Membrane Distillation. 5
5. a) Mention some positive effects on processing by Radio Frequency Electric Fields. Discuss the role of applying novel food processing techniques for preserving the nutritive value of food. 5
- b) State the fundamentals of ultrasound. Give your opinion that what type of effects has ultrasound on food properties. 5