Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 2nd year 2nd Semester Final Examination, 2019
Subject: Baking and Confectionary Technology (Theory)
Course Code: BCT-202 (T)

Full Marks: 70 **Time: 3 hours**

(Figures in the right margin indicate full marks. Answer any four questions from each section where question no. **1 and 6** are compulsory. Use separate answer script for each section. Split answer is not allowed.)

Section-A

1. a) Give an outline on the differentiation criteria of bakery and confectionary goods. 05

2. a) Write down the technological protocol of flour quality test. Differentiate the different types of rice flour. 2+2=4
   b) Viscosity and viscoelasticity are the important parameters for identifying good quality flour. How can you determine the viscosity and viscoelasticity of flour? - Explain. 06

3. a) Differentiate yeast leavened and chemically leavened bakery products. 03
   b) Prepare a bread score card for quality testing. 04
   c) How flour quality affect the baking quality? 03

4. a) Describe the working principle of leavening agent. 04
   b) Give a standard formulation for preparation of cake. 04
   c) Explain the major quality parameters for crackers biscuits. 02

5. a) Write short notes on the following: 2.5x4=10
   a) Alpha-amylase activity
   b) Properties of invert sugar
   c) Shortening agents
   d) Defects of cake

Section-B

6. State the principle of baking. 05

7. a) Enumerate the major ingredients used in bread making with their functions. 05
   b) Define the term "Bread Staling". Generalize the responsible factors that affect the staling rate of bread during storage. 1+4=5

8. a) What is pasta? Write down the approaches of raw materials specification of pasta manufacturing. 1+4=5
   b) Define breakfast cereal. Discuss about the beneficial effects of break-fast cereal. 05

9. a) Define cocoa butter. Enumerate the physical and chemical properties of cocoa butter. 2+6=8
   b) Indicate the composition of chocolate liquor. 02

10. a) Briefly describe the cocoa powder manufacturing process. 06
    b) Write a short note on "Dutch process cocoa". 04

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 2nd Year 2nd Semester Final Examination 2019
Course Title: Food Chemistry (Theory)
Course Code: FCM-202 (T)

Full Marks:70 **Time: 3 hours**

(Figures in the right margin indicate full marks. **Answer any Four (4) questions** from each section of which question number **1 & 6 are compulsory**. Use separate answer script for each section. **Split answer is strongly discouraged**.)

SECTION-A

1. Draw the structute of the following compounds: 5
   i) Amylopectin,
   ii)Lectose,
   iii)Dansyl Chloride,
   iv)Cystine,
   v)Cholesterol

2. a) Define a_w. 1
   b) " Water activity rather than water content is responsible for food spoilage"- Explain it. 4
   c) Draw a pictorial diagram of drinking water treatment plant. 5

3. a) What is amino acid? Classify amino acids on the basis of structure. 3
   b) Briefly explain the changes of protein occur during cooking process. 5
   c) Summerize the theories of gel formation of protein. 2

4. a) What is vitamin? Differentiate between osteomalacia and osteoporosis. 3
   b) Write down the chemistry and physiological functions of vitamin E, D and B_{12}. 7

5. a) What are the factors influence starch digestibility in human body? 5
   b) Elaborate the chemical methods of carbohydrate analysis. 5

SECTION-B

6. Explain different methods of water purification for drinking purposes. 5

7. a) Why lipid is called concentrated energy source? 3
   b) Why trans fatty acids are harmful for human body? 3
   c) Interpret the functions of tryglyceride in food processing. 4

8. a) Explain the toxicity mechanism of Arsenic. 4
   b) What types of effect occur in human body due to Lead and Arsenic poisoning? 3
   c) Highlight the excertion pathways of heavy metals from human body. 3

9. a) Define the following terms: 2
   Natural and synthetic flavor, smell and pigments
   b) Enlist the name of common food flavors with their characterising key chemicals. 6
   c) Classify pigments with example. 2

10. Write short notes on the following: 2.5X4=10
    i) Macrominerals
    ii) Surface active agent
    iii) Phospholipid
    iv) Peroxidation

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
B.FST 2nd year 2nd Semester Final Examination, 2019
Subject: Cereal and Legume Technology (Theory)
Course Code: CLT-202 (T)

Full Marks: 70 **Time: 3 hours**

(Figures in the right margin indicate full marks. Answer any four questions from each section where question no. **1 and 6** are compulsory. Use separate answer script for each section. Split answer is not allowed.)

Section-A

1. Describe the anatomical structure of rice kernel with diagram. 05

2. a) Explain the principle of parboiling of rice. Indicate the benefits of parboiled rice over raw rice. 2+3=5
   b) Discuss the properties and quality control of parboiled rice. 05

3. a) What are the impurities present in wheat? Describe the cleaning process of these impurities. 04
   b) Define wheat conditioning. Explain the importance of wheat conditioning. 1+2=3
   c) Describe the method of wheat conditioning. 03

4. a) What are the specific characteristics of barley for malting and brewing? 04
   b) Describe brewing process of barley. 06

5. a) Enumerate in brief the industrial utilization of maize in Bangladesh. 05
   b) Define Ready-to-eat products. Describe in brief the manufacturing process of corn flakes. 1+4=5

Section-B

6. "Byproduct utilization from rice milling could be a potential source of economic development in developing countries like Bangladesh"-Explain. 05

7. a) Find out the reasons for breakage during rice milling. How to overcome the damage during drying process? 2+3=5
   b) Briefly describe the main uses of pulses in Bangladesh. Write down the milling process of pulses? 2+3=5

8. a) Enumerate the importance of cereals in human nutrition for developing countries. 05
   b) Outline the distribution of nutrients of rice grain. What are the primary bases of rice quality for cooking and processing behavior? 2+3=5

9. a) Differentiate between: 2+2=4
      I. Cereal and Legume
      II. Aata and Maida
   b) What are the principles and objectives of enrichment of rice? 03
   c) Briefly mention the side effects of cereal consumption on human health. 03

10. a) Define 'Okara' and 'Jun'. Outline the industrial manufacturing process of soy milk. 1+4=5
    b) Why soy milk is considered a healthy alternative to cow's milk? 05

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 2nd Year 2nd Semester Final Examination -2019
Subject: Nutritional Evaluation of Processed Food (Theory)
Course Code: NEP-202 (T)

Full Marks: 70 **Time: 3 hours**

(Figures in the right margin indicate full marks. Answer **any four** questions from each section where question no. **1 and 6** are compulsory. Use separate answer script for each section. Split answer is not allowed.)

Section-A

1.	a)	What do you understand by processed food and nutritional evaluation of processed food?	2
	b)	Why is appropriate nutritional assessment important in food processing?	3
2.	a)	Classify processed food.	2
	b)	What do you think processed food is good or bad for human consumption? Justify your statement.	3
	c)	Briefly describe the effects of different food processing techniques on nutritional quality of food.	5
3.	a)	Enlist the types of browning reactions.	2
	b)	Briefly describe the adverse effects of browning reactions on nutritional quality of food.	4
	c)	How do you control the enzymatic browning reactions in food industries?	4
4.	a)	What do you mean by simmering and stewing?	2
	b)	Narrate the guidelines of home cooking to protect the nutrients content in food.	3
	c)	Summarize the effects of freezing on nutritional composition of food.	5
5.	a)	"Vitamin A is heat and O_2 sensitive"- justify the statement.	5
	b)	Illustrate the effects of commercial processing on milk and milk products.	5

Section-B

6.	a)	Draw the flow diagram of caramelization of sucrose.	5
7.	a)	Define packaging. Shortly describe the primary, secondary and tertiary functions of food packaging	1+4
	b)	Explain the effects of packaging on nutrient content of food.	5
8.	a)	List the factors that affect the Maillard reaction during food processing.	2
	b)	Describe the different steps of Maillard reaction.	5
	c)	How do you control the Maillard reaction in processed food?	3
9.	a)	Name the main methods of food fortification used by food industrialist.	3
	b)	Write the objectives of Nutrification of food.	4
	c)	Generalize the future challenges of food fortification.	3
10.	a)	How application of N_2 decreases the vitamin C level in vegetables?	2
	b)	State the relative stabilities of Vitamin A, D, E and K under various conditions.	4
	c)	Summarize the impacts of soil fertility and fertilization on nutrients content of food.	4

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 2nd Year 2nd Semester Final Examination 2019
Subject: Technology of Meat Products (Theory)
Course Code: TMP-202 (T)

Full Marks: 70 **Time: 3 hours**

(Figures in the right margin indicate full marks. Answer **ANY FIVE** questions from each section where question no. **1 and 7** are compulsory. Use separate answer script for each section. Split answer is not allowed.)

Section-A

1. a) Define meat and muscle. Briefly discuss the meat consumption habits in different regions of the world. 3.0
   b) Write down the prospects and constraints for the development of meat industry in Bangladesh. 4.0

2. a) Write down the chemical composition of the myofibriller protein. 3.0
   b) Diagrammatically present the physiological events that happen during conversion of muscle to meat. 4.0

3. a) Discuss the functions of meat protein. 3.0
   b) Describe the effects of excessive red meat consumption on cardiovascular diseases and colon cancer. 4.0

4. a) Write down the characteristics of different yield grades of beef carcass. 3.0
   b) How will you differentiate beef and carabeef using physical and biological methods? 4.0

5. a) Discuss the different methods of slaughtering animal. What is back bleeding? 3.0
   b) Briefly discuss the 'Shechita' method of slaughtering animal and mention the advantages and disadvantages of the method. 4.0

6. a) Despite carcinogenic effects of nitrite and nitrate will you use them for curing of meat? Why and how should you use them? 3.0
   b) What is canning? Describe the steps of canning. 4.0

Section-B

7. a) Illustrate the dressing procedure of pig carcass. 3.0
   b) Write down the importance of packaging. Does packaging affect meat quality? Explain with justification. 4.0

8. a) Outline the mechanisms of rigor mortis. Why is it important for meat industry? 3.0
   b) Shortly describe the mechanisms for conditioning of meat. 4.0

9. a) Define and list the slaughter house by-products. 3.0
   b) Briefly discuss the uses of slaughter house by-products. 4.0

10. a) What are the different grades of beef carcass? Write down the different yield grades of beef carcass. 3.0
    b) What are the different abnormalities encountered during ante-mortem and post-mortem inspection of meat? 4.0

11. a) Mention the different preservation methods of meat and meat products. Which method is most suitable in Bangladesh and why? 4.0
    b) Do you think sterilization of meat by ultraviolet ray is safe to consume? 3.0

12. a) Briefly discuss the importance of cleaning and sanitation and the sources of contamination of the meat plant. 3.0
    b) Write down the steps involved in instituting a HACCEP for meat industry. 4.0

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
B. FST 2nd year 2nd Semester Final Examination, 2019
Subject: Food Plants Design, Layout and Management (Theory)
Course Code: PDL-202 (T)

Full Marks: 70 **Time: 3 hours**

(Figures in the right margin indicate full marks. Answer any four questions from each section where question no. **1 and 6** are compulsory. Use separate answer script for each section. Split answer is not allowed.)

Section-A

1. How HACCP principles are implemented for safe food production in all food processing industry? –Explain. 05

2. a) Briefly describe the principle flooring materials for "Chemical Proof" Floors. 05
   b) What factors do food engineers consider for design and construction of a building for a food plant? 05

3. a) What do you mean by food machinery design? Write down the selection criteria of food processing equipment. . 2+3=5
   b) What is ergonomics? Explain the principles of hygienic design of food processing equipment. 1+4=5

4. a) Draw a schematic diagram of waste water treatment for a food industry. 05
   b) Describe the conveyance of electric from a power station to consumer premises. 05

5. a) What are the various issues of an engineer need to consider for planning the building on the site? 05
   b) What are the various methods of cleaning practices used in food industry? How you implement a CIP program for a typical food and beverage industry? 2+3=5

Section-B

6. "The basis for the success of the design of any food processes plant in a comprehensive feasibility study and evaluation" – Justify the statement. 05

7. a) Define the term: instrument, equipment and machinery. 03
   b) How selections of food processing equipment relate to the suitability for the intended application, the constructional and operational characteristics of the equipment, and the purchase and maintenance costs? 05
   c) What is material handling? What are the commonly recognized aspects of material handling? 1+1=2

8. a) What is plant layout? Show a typical layout for carbonated soft drinks processing industry? 1+4=5
   b) What do you mean by programmable logic controller? Illustrate the basic functional components of a typical PLC system. 2+3=5

9. a) What do you mean by organizational structure? Exemplify the types of organizational structures. 1+4=5

   b) Define Break-Even analysis. Consider a drinking water manufacturing industry has fixed expenses of 2000000 BDT. Selling price per bottle of 500 mL water is 15 BDT. Find out break-even-point in unit and sales. 1+4=5
   Variable cost per bottle of 500 ml water is 10 BDT.

10. a) Briefly delineate unique characteristics and types of food service system. 06
    b) Explain the roles of color-coding as preventive control in food processing plant. 04

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 2nd year 2nd Semester Final Examination, 2019
Course Title: Food Microbiology (Theory)
Course Code: FMB-202

Full Marks: 70 **Time: 3 hours**

[Figures in the right margin indicate Full Marks. Answer any **5 (Five) questions** from each section. Use separate answer script for each section. **Split answer is strongly discouraged**.]

SECTION-A

1. a) List the factors responsible for thermal resistance of microbes. 2

   b) Complete the following table. 0.5 x 10=5

Conditions/Common Names	Causal Agents
i. Neck rot of bananas	---------
ii. Brewer's yeast	---------
iii. ----------	*Cladosporium* species
iv. Burnt/Caramel flavor of milk	---------
v. Whiskers on meat	---------
vi. --------- flavor in egg	*Streptomyces* species
vii. Stale fishy odor of fish	---------
viii. ---------	*Rhizopus stolonifer*
ix. Sulfide stinker	---------
x. Sweet curdling of milk	---------

2. a) Make a list of factors that make the eggs shelf-stable for a limited period. 2

   b) Enlist some microbial spoilages of fruits and vegetables with their causal agents. 5

3. a) Define "Gray". Enumerate the factors influencing the kind and rate of spoilage of fish. 1+4=5

   b) Classify common wines. 2

4. a) Classify food-borne illness based on etiology with examples. 4

   b) Differentiate food infection from food intoxication. 3

5. a) Define thermodurics with examples. 2

   b) Describe the source of contamination and spoilage of meat. 5

6. a) What is single cell protein (SCP)? Enlist microbes used as SCP with its nutritive value. 1+3=4

   b) Differentiate the following terms – 1 x 3=3

   i. Simmering and boiling
   ii. Drip and leakage
   iii. Evaporated milk and condensed milk

SECTION-B

7. a) List natural inhibitory substances present in different foods. 2

   b) Describe the factors that regulate the growth of microorganisms in food. 5

8. a) State the WHO standard of drinking water. 3

   b) Enumerate the process of canning. 4

9. a) Define food-borne disease outbreak. 2

   b) Design a guideline for investigating an outbreak of Botulism. 5

10. a) List five (5) fermented dairy products. 2

    b) Mention food enzymes with their sources and application(s). 5

11. a) How will you preserve fish? 3

    b) Describe the spoilage of egg. 4

12. a) Define food control and list the regulatory agencies responsible for food control. 3

    b) Outline HACCP activities of a milk industry. 4