

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Food Trade and Laws (Theory)
Course Code: FTL-302

Full Marks:35

Time: 2 hours

(Figures in the right margin indicate full marks. Answer **Four (4)** 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. What is Globalization? 02
2. What do you know about Quality Management System (QMS)? Briefly describe the basic principles of QMS. 05
3. Define BSTI and briefly describe the functions of BSTI in food industry. 05
4. How can you identify the process in an organization? 05
5. What are the barriers of international trade? 05

SECTION: B

6. What is domestic trade? 03
7. What do you mean by ISO? Write down the corrective action for process improvement in future. 05
8. Explain the resources and tri-functional model of international trade. 05
9. In what way social and political forces interact in the development of food law and regulation? 05
10. Briefly discuss the basic reasons, merits and demerits of international trade. 05

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Food Packaging (Theory)
Course Code: FPK-302

Full Marks: 70

Time: 3 hours

(Figures in the right margin indicate full marks. Answer **Four (4)** 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. | What do you mean by food packaging? | 5 |
| 2. | a) Discuss in details the function of food packaging. | 7 |
| | b) What are the risks of food packaging? | 3 |
| 3. | a) What is container? Write down the classification of food storage container. | 7 |
| | b) What are the functions of food container? | 3 |
| 4. | a) Discuss in details the extrusion process for manufacturing of plastic package with a neat diagram. | 8 |
| | b) What is injection molding process? | 2 |
| 5. | a) Write down the classification of food packaging based on packaging category. | 5 |
| | b) Discuss about the various types of flexible packaging. | 5 |

SECTION: B

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|-----|---|---|
| 6. | Discuss the spoilage and deterioration of food during packaging. | 5 |
| 7. | a) What type of environment is suitable for food packaging? | 5 |
| | b) Write down the characteristics of flexible packaging film. | 5 |
| 8. | a) What is shelf life? What are the factors that influence the shelf life of a food? | 5 |
| | b) How can you determine the shelf life of package food products? | 5 |
| 9. | a) Write down the packaging process of the following food:
i) Respiring fruits and vegetables
ii) Fresh meat
iii) Pasteurized products | 9 |
| | b) What are the functions of labeling? | 1 |
| 10. | a) Discuss in brief the FDA regulation of food packaging. | 5 |
| | b) Write down the raw materials and general step for manufacturing of glass containers. | 5 |

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Technology of Sugar and Sugar Products (Theory)
Course Code: STH-302

Full Marks: 70

Time: 3 hours

(Figures in the right margin indicate full marks. Answer **Four (4)** questions from each section where question no. **1** and **6** are compulsory. Use separate answer script for each section.)

SECTION: A

1. What is sugar? Discuss the classification of sugar. 5
2. a) Write down the chemical reaction of sucrose formation in sugar cane. 6
b) What are the constituents of sugar cane and its juice? 4
3. Discuss in details the extraction process of juice from sugar cane? 10
4. a) Discuss in details the properties of sucrose. 7
b) What are the factors that influence manufacturing of quality cane? 3
5. a) What is clarification of cane juice? Write down its objective in sugar manufacturing. 3
b) Discuss in details the sulphitation process for clarification of cane juice. 7

SECTION B

6. Draw the chemical structure of d-glucose, sucrose and lactose. 5
7. a) Discuss the principle of evaporation. 4
b) How can you calculate the "total water to be evaporated" and "evaporation coefficient" in an evaporator? 6
8. a) Discuss the principle and mechanism of grain formation in sugar. 5
b) What is seeding in sugar manufacturing? How can you prepare seed slurry in sugar industry? 5
9. a) What is massecuites? Discuss the curing process of massecuite. 4
b) Discuss in details the difference between white sugar and brown sugar with their compositions. 6
10. a) With process flow scheme discuss the industrial preparation of ethanol by the fermentation of molasses. 7
b) What is corrosion? Discuss the theory of corrosion. 3

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Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Technology of Food Preservation (Theory)
Course Code:TFP-302

Full Marks: 70

Time: 3 Hours

(Figures in the right margin indicate full marks. Answer **Four (4)** 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 is food preservation? 2
- b) Discuss the functions of different food additives that are commonly used. 3
2. a) Explain an expression for stress by Maxwell Model. 3
- b) Enumerate in brief the flow properties of powder food. 3
- c) A suspension of 500 micron particles is being transported through a 4 inch diameter vertical tube using 60° F water as a conveying liquid. If the density of the suspension is 70 lb_m/ft³ with volumetric concentration of 0.3 and is being conveyed at a velocity which maintains a uniform concentration gradient in the tube. The density of solids is 90 lb_m/ft³. Find out friction loss. 4
3. a) Define Food Irradiation. 2
- b) What are the effects of radiation on living organism? 2
- c) Give an overview of wholesomeness and dosimetry of irradiated foods. 4
- d) Show the relationship among energy, wave length and frequency. 2
4. a) Classify quality attributes related to food only. 2
- b) Describe in brief the fundamental factors which affect quality of food. 3
- c) How can you ensure food quality in an industry? 3
- d) What are the responsibilities of inspection department? 2
5. a) Narrate the principles of chemical food preservation. 2.5
- b) Write down the regulation for using additives in food. 2.5
- c) Enumerate the factors influencing effectiveness of preservation. 2.5
- d) Differentiate between preservatives and food additives. 2.5

Section: B

6. Define viscosity and consistency. Outline the various methods for measurement of viscosity/ consistency, texture and color of food. 5
7. a) Describe major irradiation process for food preservation. 4
- b) Mention the major criteria for designing irradiation plant and radiation source. 3
- c) Give classification of defects in food with examples. 3
8. a) Discuss different taste panel methods. 3
- b) Describe about additional quality factors and chromatography. 4
- c) Explain the effects of freezing on food and microorganisms. 3
9. a) Write down the principle of drying. 2
- b) Show in tabular form the application of different dryers for several foods. 4
- c) Give a brief outline of use of solar energy in food processing. 4
10. a) Mention Hazard Analysis for frozen foods. 2
- b) Enumerate in brief the low temperature preservation methods for foods. 2
- c) Write short notes on (any three) 2×3=6

I. Texture profile; II. Maturing agent; III. Sequestrates; IV. Food color

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Tea, Coffee, Cocoa and Spices Technology (Theory)
Course Code: TCS-302

Full Marks: 55

Time: 3 hours

(Figures in the right margin indicate full marks. Answer **Four (4)** 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. Which term is appropriate for tea- Fermentation or Oxidation and why? 3
2.
 - a) Give the composition of green tea leaf according to solubility in water. 2
 - b) Which components are responsible for tea color and flavor and why? 2
 - c) What is instant tea? Describe the manufacturing process of black tea. 4
3.
 - a) State the equation of withering percentage with an example. 2
 - b) What do you mean by biochemical changes in tea? Describe in brief the biological changes take place during withering. 4
 - c) What is the beneficial effect of tea fermentation? 2
4.
 - a) What do you mean by tea tasting and tea quality? State the characteristics of dry leaf. 2
 - b) Write shortly the following terms: Bakey, Burnt, Bloom, Flaky 2
 - c) Describe the manufacturing process of coffee. 4
5.
 - a) Write down the composition of coffea arabica bean after roasting. 2
 - b) How coffee bean is harvested? 2
 - c) Describe the manufacturing process of instant coffee. 4

SECTION: B

6.
 - a) Sketch and label the crucial portion in a typical structure of a coffee bean. 2
 - b) How can you differentiate spice from herbs? 2
7.
 - a) Classify spice on the basis of botanical families, crop duration and growth habit. 2
 - b) What are active plant constituents? Write down the name of active plant constituents and flavor compounds found in spice. 4
 - c) Mention the general functions of spice. 2
8.
 - a) State the role of spices in cookery. 2
 - b) Enumerate the quality standard specifications for spices. 2
 - c) What kind of quality should be maintained as emergence for cocoa products? 4
9.
 - a) What kind of preserving condition should be considered for storage of dried spices? 2
 - b) Classify chocolate with specific composition. 2
 - c) Narrate the manufacturing process of cocoa powder. 4
10.
 - a) Describe the harvesting of cocoa bean and its processing. 4
 - b) What do you mean by dutching, conching and imitation chocolate? 2
 - c) Write down the uses of cocoa and chocolate. 2

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Food Safty and Hygiene (Theory)
Course Code: FSH-302

Full Marks: 70

Time: 3 hours

(Figures in the right margin indicate full marks. Answer **Four (4)** 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) Write the functions of disinfectant, detergent and sanitation. | 3 |
| | b) What are the responsibilities of a food handler during food preparation? | 2 |
| 2. | a) What are the key benefits of good hygiene practices? | 3 |
| | b) Describe the symptoms of food poisoning. | 2 |
| | c) What are the causes of food poisoning? | 3 |
| | d) Who are the high risk groups for food poisoning? | 2 |
| 3. | a) What is HACCP? | 1 |
| | b) Mention the stages of the HACCP process. | 3 |
| | c) What do you mean by "Establishment of CCP limits"? | 3 |
| | d) What documentations are required for HACCP? | 3 |
| 4. | a) Describe the principles of food storage. | 3 |
| | b) Write the preservation method for maintaining the self-life of food. | 3 |
| | c) Write the name of common food pests. What are the key points for control of pests? | 4 |
| 5. | a) Briefly describe the general chemical safety guidance. | 3 |
| | b) Describe the high temperature and low temperatures methods for food preservation. | 5 |
| | c) What is data coding? | 2 |

SECTION: B

- | | | |
|-----|--|--------|
| 6. | a) What is risk? What is an adverse health effect? | 3 |
| | b) Why is risk assessment important? | 2 |
| 7. | a) Briefly discuss about the physical, chemical and biological hazard of food. | 4 |
| | b) When hand washing of food handler should be carried out? | 4 |
| | c) What are the sources of bacteria in food? | 2 |
| 8. | a) What is a risk assessment? | 2 |
| | b) How do you do a risk assessment? | 4 |
| | c) How do you rank or prioritize the risk? | 2 |
| | d) What are the methods of hazard control? | 2 |
| 9. | a) Describe the documentation of food safety systems with six simple steps. | 6 |
| | b) Mention the main causes of accidents in the work place of food industry. | 4 |
| 10. | Write a short note on the following : | 5×2=10 |
| | i) Pesticides | |
| | ii) Pasteurization | |
| | iii) Food borne diseases | |
| | iv) Food hygiene | |
| | v) Cross contamination | |

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Fermentation and Beverage Technology (Theory)
Course Code: FBT-302

Full Marks: 70

Time: 3 hours

(Figures in the right margin indicate full marks. Answer **Four (4)** 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 are the differences between traditional fermentation and tea fermentation? 3
b) Write the name of four species of bacteria and fungus which are used in fermentation. 2
2. a) Write the main five purposes to serve the food fermentation. 3
b) Why fermentation is healthy? 2
c) What is productivity of fermentation process? 2
d) Mention some fermentation products, their organisms and uses. 3
3. a) Describe the various components of an ideal fermenter with their purposes. 7
b) Mention the types of fermenter. 3
4. a) Classify fermented foods by types? 3
b) What do you mean by growth kinetics of microorganism? 2
c) Describe with figure the "Air lift fermenter". 5
5. Write short note on (any two): 10
 - i. Stirred tank fermenter
 - ii. Body construction of ideal fermenter
 - iii. Manufacturing procedure for white cheese

SECTION: B

6. a) What is fermentation? 1
b) Draw a generalized, schematic representation of a fermentation process? 4
7. a) Describe with flowchart the manufacture of ethyl alcohol from molasses. 7
b) Why molasses is preferred for the manufacture of alcohol. 3
8. a) What is the basic difference between "soft drinks" and "hard drinks"? 3
b) Describe the main ingredients of soft drinks. 7
9. a) What is lactic acid fermentation? Give a manufacturing flow sheet for the production of wine. 4
b) What do you mean by aging or maturation? Write down the function of carbonation? 2
c) How fruit beverages are different from other beverages? Suppose acidify and TSS of fruits pulp were given as 0.35% and 15%. The manufacturer wants to produce 500g of squash (Juice/pulp 25%, TSS 40% and sulphur-di-oxide 350 ppm in the form of KMS). Calculate the amount of acid, sugar and water to be added. 4
10. a) Draw the flow charts of operation and quality control activities in the manufacture of beer. 6
b) Mention the quality control activities during the production of soft drinks and caffeine benefits. 4

Chittagong Veterinary and Animal Sciences University
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BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Applied Dietetics (Theory)
Course Code: APD-302

Full Marks: 55

Time: 3 hours

(Figures in the right margin indicate full marks. Answer ^{Three} ~~Four~~ (3) 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. | Write the classification of diet. | 3 |
| | b. | Mention the purpose of diet therapy. | 1.5 |
| | c. | What are the illness factors that affect food consumption? | 1.5 |
| | d. | What do you mean by "Balanced diet" and "Modified diet"? | 1 |
| 2. | a. | State the main goal of dietary management in the pre-operative period. | 2 |
| | b. | Mention the food sources of the nutrients that are crucial to a successful surgery. | 2 |
| | c. | Describe a diet plan for a post-operative patient. | 6 |
| 3. | a. | What are the nutritional risk factors for cardiovascular diseases? | 1.5 |
| | b. | Define 'metabolic syndrome' and 'hyper-lipoproteinemia'. | 1.5+1 |
| | c. | Write the dietary guidelines for a patient suffering from lipid disorder. | 4 |
| | d. | Make a list of low sodium containing food. | 2 |
| 4. | a. | Define 'Ascites' and 'Edema'. | 2 |
| | b. | What should be considered for the appropriate diet therapy of hepatitis? | 4 |
| | c. | What types of food are allowed and avoided in peptic ulcer and food allergy patients? | 4 |

SECTION: B

- | | | | |
|----|----|---|-----|
| 5. | a. | What are the rationale of water and fat soluble vitamins requirement during the pregnancy period? | 5 |
| | b. | Write the transitional factors that should be adjusted for dietary management during pregnancy period. | 3 |
| 6. | a. | Arrange the food mentioned below according to 'allow and restriction' for a diabetic patient:
Rice, sugar, leafy vegetables, wheat, citrus fruits, cauliflower, pulse, ripe mango. | 2 |
| | b. | What are the dietary factors responsible for hypertension? | 1 |
| | c. | Describe dietary guidelines for hypertensive patients. | 4 |
| | d. | What do you mean by 'Dietary approach to stop hypertension' (DASH)? Write the component of DASH diet. | 1+2 |
| 7. | a. | What do you mean by 'proteinurea' and 'pyria'? | 1 |
| | b. | Write the definition of obesity. | 1 |
| | c. | Write the general principles of dietary management for a patient suffering from a renal disease. | 5 |
| | d. | Write the dietary regimen for a patient on dialysis. | 3 |
| 8. | | Write short note on: | |
| | a. | Daily food needs for toddlers. | 3 |
| | b. | Factors affecting nutrition and diet in the elderly people. | 3 |
| | c. | Dietary management of an underweight child. | 4 |

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd Year 2nd Semester Final Examination, 2012
Subject: Dairy Product Technology (Theory)
Course Code: DPT-302

Full Marks: 70

Time: 3 Hours

(Figures in the right margin indicate full marks. Answer **four (4)** questions from each section of which question number 1 and 6 are compulsory. **All fractions of a question should be answered together.** Use separate answer scripts for each section.)

Section: A

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|----|----|--|-------|
| 1. | a) | State the concept of Dairy Product Technology. | 3 |
| | b) | What should be the ideal quality of milk for preparing quality dairy products? | 3 |
| | c) | State the common dairy products available in Bangladesh. | 2 |
| 2. | a) | Define butter-milk. | 2 |
| | b) | Enumerate the ingredients that are required in preparing laassi. | 3 |
| | c) | Sketch the procedure of preparation of laassi. | 4 |
| 3. | a) | What is cheese? Why is it called milk-meat? | 2 |
| | b) | State the principles of cheese making. | 3 |
| | c) | Classify cheese and state the composition of Dhaka cheese. | 4 |
| 4. | a) | Define Cream, butter, ghee and butter oil. | 2 |
| | b) | State different types of cream with their definitions. | 3 |
| | c) | Sketch the steps of butter manufacture in the industry. | 4 |
| 5. | | Write short notes on any three of the following | 3X3=9 |
| | a. | Over run in butter, b. Defects of cheese, c. Ripened dairy products | |
| | d. | Preparation of chhana, e. Swiss cheese, f. Soft butter | |

Section: B

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|----|----|---|-------|
| 6. | a) | Define and classify yoghurt. | 2 |
| | b) | Compare the concept of yoghurt and curd | 3 |
| | c) | State the manufacture of plain yoghurt. | 3 |
| 7. | a) | Classify ice cream. How does it differ from ice milk? | 2 |
| | b) | Enumerate the role of stabilizer and emulsifier in manufacture and keeping quality of ice cream. | 3 |
| | c) | What is over run in ice cream? State the freezing procedure of ice cream. | 4 |
| 8. | a) | Define evaporated milk, condensed milk and dry milk. | 2 |
| | b) | Write down the composition of condensed milk and full cream milk powder. | 3 |
| | c) | Sketch the preparation of evaporated milk. | 4 |
| 9) | a) | What do you mean by "Starter Culture"? | 2 |
| | b) | Classify starter culture. Why is skim milk preferred for starter preparation? | 3 |
| | c) | State the procedure of developing and maintenance of of starter culture in the laboratory. | 4 |
| 10 | | Write short notes on any three of the following | 3X3=9 |
| | a. | Kulfi, b. Defects of ice cream, c. common defects of cheese ^{Market milk} , d. Toned milk | |
| | e. | Aroma and flavor; and f. Phase inversion theory | |