

Chittagong Veterinary and Animal Sciences University

Faculty of Food Science and Technology

BFST 4th Year 1st Semester Final Examination 2018

Course Title: Extension Communication Management

Course Code: ECM-401

Full Marks: 35

Time: 2 hours

(Figures in the right margin indicate full marks. Answer any three (3) questions from each section of which question number 1 is compulsory. Use separate answer script for each section. Split answer is strongly discouraged.)

SECTION-A

1. a) Define extension and agricultural extension. 2
b) State the functions of extension. 3
2. a) Define Leadership. 1
b) Outline the different forms of leadership. 2
c) Distinguish professional leader from local leader. 3
3. a) Define extension programme and programme planning. 1+1=2
b) Write down the principles of extension programme planning. 2
c) Compare plan of work and calendar of work. 2
4. a) Define learning. 1
b) Enlist the elements of learning process. 2
c) Describe the Maslow's need theory of Motivation. 3

SECTION-B

5. a) Enlist five extension organizations in Bangladesh who providing extension services in food and Agriculture. 3
b) Illustrate the features of an extension organization. 3
6. a) What is meant by innovation? 1
b) State the types of innovation with example. 2
c) Describe the innovation decision process with a neat sketch. 3
7. a) What are the key elements of non formal education? 3
b) Differentiate formal education from extension education. 3
8. Write short notes on any two of the following : 3×2 = 6
a) Human Resource Development (HRD)
b) Functions of communication.
c) Foundation training.

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th Year 1st Semester Final Examination 2018
Course Title: Epidemiology and Public Health (Theory)
Course Code: EPH-401

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 and 6 are compulsory. Use separate answer script for each section. Split answer is strongly discouraged.)

SECTION-A

- | | | |
|----|---|-------|
| 1. | a) Define epidemiological triad and public health. | 3 |
| | b) What are the core epidemiological functions? | 2 |
| 2. | a) Explain endemic, epidemic, sporadic and pandemic condition of public health diseases with examples. | 5 |
| | b) Define cross sectional study and cohort study with examples. | 5 |
| 3. | a) Define Herd immunity. Demonstrate the sufficient component cause model with example. | 1+5=6 |
| | b) Define carriers. How many carriers are characterized in animal and human? | 1+3=4 |
| 4. | a) A new vaccine recently imported hence manufacturer claimed that the vaccine have 96% efficacy against the disease. To assess the effectiveness what kind of study will you design? Describe with sketch diagram. | 5 |
| | b) Illustrate the core functions of epidemiology. | 5 |
| 5. | a) Define probability and non -probability sampling. | 2 |
| | b) What is simple random sampling? Discuss the simple random sampling technique with example. | 1+4=5 |
| | c) Differentiate stratified and cluster sampling. | 3 |

SECTION-B

- | | | |
|-----|--|--------|
| 6. | a) What do you mean by modes of transmission of agent? Classify the modes of transmission of agent to host. | 1+4=5 |
| 7. | a) Describe the steps of outbreak investigation of food borne illness. | 5 |
| | b) What do you mean by hazard? What are the important information you can have from the epi-curve to control the outbreak? | 1+4 |
| 8. | a) Recognize a confounding factor in an epidemiological study. How you minimize it in your study design? | 2+3=5 |
| | b) Distinguish the confounding and interaction. | 3 |
| | c) Define medical ethics. Name the principles of medical ethics. | 1+1=2 |
| 9. | a) Define survey, surveillance and monitoring in epidemiology. | 3 |
| | b) Discuss the types of nutritional surveillance. | 3 |
| | c) Classify the types of validity in epidemiology. | 4 |
| 10. | Write short notes on | 5x2=10 |
| | a. Prevalence and incidence | |
| | b. Selection bias | |
| | c. Lead time and trade off | |
| | d. Causation pattern | |
| | e. Measures of association | |

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination, 2018
Subject: Renewable Energy in Food Processing (Theory)
Course Code: RFP-401(T)

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 & 6 are compulsory. Use separate answer script for each section. Split answer is discouraged.)

SECTION-A

1. a) Illustrate the function of the basic energy model. 2
 b) Write down your ideas about energy. Mention different types of energies with proper examples. 1+2 = 3

2. a) Mention the parameters on which amount of insolation depend. Calculate the amount of insolation on sun tracking surface. 1+3 = 4
 b) Discuss with neat sketch the low temperature power generation using flat plate solar collector and two loop active water heating system. 3+3 = 6

3. a) Discuss about the parameters that affect solar still performance. 3
 b) Describe the process with sketch the solar pond power generation system. 5
 c) Define concentration ratio. Write some disadvantages of dish type solar cooker. 2

4. a) Show some significant applications of solar energy which are well suited for developing nations. 3
 b) Explain how electricity generates when a photon hits a piece of silicon. 5
 c) Give the concept of MPPT with necessary diagrams. 2

5. a) Briefly describe the following conversion technologies: 3+3 = 6
 i) Dry Steam ii) Binary Steam
 b) Define geothermal power. Discuss the utilizing process geothermal power in electrical power generation. 4

SECTION-B

6. a) Do you find any limitation of renewable energy while using it for food processing? – Explain your answer with proper logic. 3
 b) Discuss the given points 2
 i). Geothermal Fluid ii) PV array

7. a) What is wind turbine? Explain the electricity generation process of a wind turbine. 5
 b) A Wind turbine develops 2 kw of maximum power at a wind velocity of 60 km/hr. Find the diameter of wind turbine. Density of the air is 1.2 kg/m³. 5

8. a) Why conversion of biomass is needed to use it as biofuel? Describe different types of conversion process. 1+2 = 3
 b) Write down the application of biomass energy in different sectors. 2
 c) Explain the formation procedure of Charcoal and Ethanol. 5

9. a) How does a biogas plant work? What are the reactions that take place in a biogas plant? 2.5+2.5 = 5
 b) Draw the solar cell I-V characteristics curve showing MPP. And also explain how the output of a solar cell varies with different temperature and irradiation levels. 5

10. a) Give the general layout of a mechanical hydro-power pumping system which is suitable for pumping water to a considerably higher level. Explain its function cleanly. 5
 b) Discuss the types of a hydro-turbine. 2
 c) Write down the technological limitations of a geothermal energy and wind energy. 3

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination, 2018
Course Title: Food Quality Control and Assurance (Theory)
Course Code: FQA-401

Full Marks: 70

Time: 3 hours

[Figures in the right margin indicate Full Marks. Answer any 4 (Four) questions from each section where question no. 1 & 6 are compulsory. Use separate answer scripts for each section. Split answer is strongly discouraged.]

SECTION-A

1. a) Define the term 'Quality' and 'Food Quality'. 1+1
 b) Label the dimensions of quality and quality control cycle. 2+1

2. a) Define food safety. Estimate the objectives of food safety. 1+2
 b) Summarize the food safety hazards.
 c) Enlist different types of hazards.

3. a) List five food grade colors with E number. Why is Red-40 not vegan? 1+2
 b) How does UV-Vis-Spectroscopy work? Explain with figure.

4. a) Define and categorize food adulteration.
 b) Give an outline about new adulterants. Sketch the poison chain of incidental adulterants. 2+2

5. a) What do you mean by TQM? State the principles of TQM. 2+2
 b) Define recall plan. Why would a product be recalled? 2+2
 c) Enlist the most important GMPs.

SECTION-B

6. Construct the mathematical combination of Lambert's law and Beer's law.

7. a) Distinguish between absorption and emission spectrum.
 b) Design the basic instrumentation of an atomic absorption spectrophotometer.
 c) According to WHO, the maximum permissible limit of Pb^{2+} in drinking water is 0.001 mg/dm^3 . The tap water taken from a building was analyzed by using AAS to determine Pb^{2+} concentration. An AAS was calibrated and data obtained as following

$Pb^{2+}_{(aq)}$ (mg/dm^3)	Absorbance
0.25	0.110
0.50	0.220
0.75	0.340
1.00	0.450
1.25	0.560
sample	0.170

Draw a calibration curve and determine whether or not the water is within the WHO recommended permissible limit of $Pb^{2+}_{(aq)}$ concentration.

8. a) State the principle of FTIR.
 b) Arrange the instrumentation of FTIR.
 c) Give an illustration about the sample analysis process of FTIR.

9. a) Illustrate the principles of chromatography.
 b) Define TLC. Discuss about the R_f value. 1+
 c) How can you consider a processing stage as CCP in a food processing plant?

10. a) Define retention time. Briefly discuss about the qualitative and quantitative analysis in HPLC system. 1+
 b) Explain the gradient and isocratic condition in HPLC.
 c) Discuss the separation modes of HPLC.

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 3rd year 1st Semester Final Examination 2018
Subject: Refrigeration, Air Conditioning and Food Processing (Theory)

Course Code: RAP-401 (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 and 6 are compulsory. Use separate answer script for each section. Split answer is strongly discouraged.)

Section-A

1. Discuss the relationship between refrigeration and Air Conditioning system. Mention five typical examples of refrigeration and Air conditioning in food processing. 4+1=5

2. a) Explain Time-Temperature-Transformation diagram for refrigeration. Draw a neat diagram and vividly describe the operating principles of an Ammonia Absorption refrigeration system. 2+4=6
b) Enumerate in brief the comparisons between vapour compression system and vapour absorption system. 4

3. a) Describe the following psychrometric processes: 2.5x4=10
 - i) Adiabatic Saturation,
 - ii) Heating and Humidification,
 - iii) Cooling and Humidification,
 - iv) Cooling and Dehumidification.

4. a) Develop an expression for heat transfer by conduction through a hollow sphere. 5
b) What are the basic elements for air-conditioning control? 2
c) Show the effect of sub-cooling in a refrigeration system. 3

5. a) Define ton of refrigeration, workdone and by pass factor. 3
b) What are the main factors that govern the comfort of human being? 2
c) Draw a comfort chart and show how a certain effective temperature can be maintained. 3
d) What do you mean by temperature gradient and thermal resistance? 2

Section-B

6. Explain the applications of psychrometry in food processing. 5
7. a) Define acoustics and noise nuisance. Mention the characteristics of sound. 2+2=4
b) Develop an expression for quantity of heat transferred for parallel flow through a heat exchanger. 4
c) Write down the chemical name of the following refrigerant: R₁₂, R₁₃, R₁₁₃ and R₂₂. 2
8. a) Shortly describe and design the configuration of following air conditioning system with psychrometric representation: 2.5x4=10
i) Summer air conditioning with single cooling coil and mixing,
ii) Winter air conditioning with double reheat coils and air washer,
iii) Summer air conditioning system for hot and humid outdoor conditions,
iv) Summer air conditioning system for hot and dryout door conditions.
9. a) Explain the different initial cooling methods for cold storage. 5
b) Calculate the heat loss per unit length from a 20 cm steel pipe of 4 mm thickness, carrying saturated steam and insulated steam with 4 cm thick layer of asbestos and 2 cm thick outer layer of magnesia, the inside film coefficient is 3000 kcal/m²-hr°C and outside film coefficient is 12 kcal/m²-hr°C. The ambient and steam temperature are 35°C and 250°C respectively and
K(pipe): 300 Kcal/m.hr.°C,
K(asbestos): 20 Kcal/m.hr.°C &
K(magnesia): 15. Kcal/m.hr.°C. 5
10. a) What do you mean by heating load/cooling load? List all the parameters you must consider for calculating heating load? 2+3=5
b) Define the following terms: 1x5=5
(i) Wet bulb temperature,
(ii) Percentage humidity,
(iii) Isentropic Compression process,
(iv) Isothermal Expansion process,
(v) Co-efficient of performance (C.O.P).

(Figures in the right margin indicate full marks. Answer any three (3) questions from each section of which question number 1 and 5 are compulsory. Use separate answer script for each section. Split answer is strongly discouraged.)

SECTION-A

1. a) Define Marketing. 3
b) Identify 4 Pillars of Marketing Concept. 3
c) Define Need, Want and Demand and give examples. 3
d) List 5 Global and 5 National Food Giants. 2
2. a) Explain the marketing functions related to food marketing. 4
b) Write the scopes where you can use your marketing knowledge as a Food Science Graduate. 4
c) Differentiate among Marketing, Selling and Shopping. 4
3. a) What types of problems are related to food marketing in Bangladesh? Discuss. 4
b) "Customer is the king in the Kingdom of Marketing"- Do you agree? Justify your answer. 4
c) Propose some ideas how you can add value to a product of your own choice. 4
4. a) Calculate Marketing Margin from a hypothetical example. 4
b) Mention the elements of Marketing Costs. 4
c) Propose some ideas how you can reduce the Marketing Costs. 4

SECTION-B

5. a) Define business and agribusiness. 3
b) Describe how Agribusiness emerged. 4
c) Explain the Agribusiness System. 4
6. a) Analyze your personal SWOT as a Food Science Graduate. 4
b) Predict the Market Risks for launching Processed Fruit Product in Chittagong Market. 4
c) Predict some challenges in Processed Food Business in Bangladesh. 4
7. a) Explain the reasons for preparing a business plan. 4
b) What is strategic plan? Discuss the importance of strategic plan in food marketing. 4
c) Elaborate the elements of a typical business plan. 4
8. a) Explain the basic functions of Management. 4
b) Is there any importance of communication in food marketing? Explain how? 4
c) Point out the qualities of a good leader with example. 4

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination 2018
Subject: Leadership and Food Entrepreneurship Development (Theory)
Course Code: FED-401

Full Marks: 35

Time: 2 hours

(Figures in the right margin indicate the full mark. Answer any 2 (Two) questions from each section. Question 4 is compulsory. Use separate answer script for each section. **Split answer is strongly discouraged.**)

Section-A

1. a) What do you understand by the entrepreneur? Give the main characteristics of an entrepreneur. 3
b) Describe the types of entrepreneurs. Distinguish between entrepreneur and intrapreneur. 4
c) Comment on the statement that entrepreneurs are made not born. 2
2. a) Define entrepreneurship. Write the roles of entrepreneurship in capital formation in context of Bangladesh. 2
b) Discuss the functions of women entrepreneur in context of Bangladesh. 4
c) "Entrepreneur and entrepreneurship are catalysts in the process of economic development of a country" Explain. 3
3. a) Define rural entrepreneur. Write the need and importance of rural entrepreneur in respect of Bangladesh. 4
b) Discuss the role of NGOs for development of rural entrepreneurship in Bangladesh. 5

Section-B

4. a) Define leader and leadership. State and discuss the classifications of leaders in context of food sector. 3
b) Briefly discuss the qualities and responsibilities of a good leader. 4
c) Write short notes on Opinion Leadership. 1
5. a) Outline the concept of Motivation in line with the entrepreneurship development. 2
b) Write the different types of motivators that are results of successful extension services. Sketch their relevant characteristics. 4
c) Write short notes on Social Mobilization 3
6. a) What do you mean by the concept of Small scale industry? Discuss the characteristics of small scale industries in context of Bangladesh. 4
b) Write the limitations of small scale industry. 2
c) Write short notes on Discounted Project Appraisal Techniques. 3

Chittagong Veterinary and Animal Sciences University

Faculty of Food Science and Technology

BFST 4th Year 1st Semester Final Examination 2018

Course Title: Poultry Product Technology (Theory)

Course Code: PPT-401

Full Marks: 35

Time: 2 hours

(Figures in the right margin indicate full marks. Answer any three (3) questions from each section of which question number 1 is compulsory. Use separate answer script for each section. Split answer is strongly discouraged.)

SECTION-A

1. a) Define the following terms: 0.5×6 = 3.0
Organic meat, Poultry Products, Marbling, Broiler, Green Goose, Squab
- b) Prepare a chart showing proportion of egg utilization of Bangladesh. 2.0
2. a) Describe the nutritive value of an egg. 4
- b) List the name of food products which can be prepared from poultry egg. 2
3. a) What do you mean by value added products? Discuss how value is added. 1+2 = 3
- b) Explain how color and texture affect poultry meat quality. 3
4. a) Enumerate the principles of HACCP. Sketch different CCPs followed in a modern poultry processing plant. 2+2 = 4
- b) Differentiate the following terms: 2×1 = 2
 - i) PSE and DFD
 - ii) Meat extenders and meat fillers.

SECTION-B

5. a) Define food additives. List common food additives with their mechanism of action, uses and examples. 1+3 = 4
- b) Summarize the USDA specifications for grading of poultry carcasses. 2
6. a) Illustrate different steps of water fowl processing. 5
- b) Name the different national and international food control agencies. 1
7. a) Explain smoking and canning of poultry meat. 4
- b) "Poultry meat is popular than others" Justify. 2
8. Write Short notes on: 3×2 = 6
 - a) Balut
 - b) Hurdle Technology
 - c) Additives used in meat products.