

Chattogram Veterinary and Animal Sciences University

Faculty of Food Science and Technology

BFST 4th year 1st Semester Final Examination, 2023

Course Title: Leadership and Food Entrepreneurship Development (Theory)

Course Code: FED - 401(T)

Full Marks: 35

Time: 2 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question no. **1** is compulsory. Use separate answer script for each section. Split answers are strongly discouraged.)

SECTION-A

1. a) Distinguish between entrepreneur and entrepreneurship. Write down the characteristics of an entrepreneur. 3
b) What are the basic differences between entrepreneur and intrapreneur? 2
2. a) Briefly discuss the dimensions of entrepreneurial behaviour. 3
b) Explain the factors that affect entrepreneurial behaviour. 3
3. a) Define entrepreneurial competencies. State the major competencies of an entrepreneur. 3
b) What are the factors enhancing the entrepreneurial growth? – Explain. 3
4. a) Define financing. Write down the sources of financing. Distinguish between shares and debentures. 3
b) Write the characteristics of small scale industries in context of Bangladesh. 3

SECTION-B

5. a) Explain the concept of leadership. 3
b) Briefly discuss the qualities of a good leaders. 3
6. a) What characteristics do make one an ideal rural leader? 3
b) Explain the good leadership quality to become a good entrepreneur. 3
7. a) Do you think that there is a gender based discriminations in entrepreneurship development in Bangladesh? Give evidences in support of your answer. 3
b) Give a picture of woman's involvement in rural entrepreneurship in Bangladesh. 3
8. Write short notes on (any three): 3×2=6
 - a) Maslow's need hierarchy theory
 - b) Factors entrepreneurial mobility
 - c) Graphical evaluation and review techniques (GERT)
 - d) Community mobilization

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination, 2023
Course Title: Epidemiology and Public Health (Theory)
Course Code: EPH-401(T)

Full Marks: 70

Time: 3 Hours

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 answers are strongly discouraged.)

SECTION-A

1. a) Why Epidemiology is important for public health? Explain the core function of Epidemiology. 2+3=05
2. a) Draw and briefly state the sufficient component cause model. 07
b) List the objectives of doing a nutritional survey. 03
3. a) What is paternalism and when it is used? 02
b) Describe the principle of medical ethics. 04
c) What do you mean by error in Epidemiology? How do you determine the sample size of conducting a study? 1+3=04
4. a) Define Endemic, Sporadic, Hyperendemic, and Epidemic condition of Disease. 04
b) Illustrate the Epidemiological steps of an outbreak investigation. 06
5. a) Briefly describe the different types of Epidemiological studies. 07
b) What is meant by validity and reliability? 03

SECTION-B

6. a) Define surveillance and monitoring. 02
b) Write down the different types of nutritional surveillance. 03
7. a) Define sample and population. 02
b) Outline the steps that should follow in sampling design. 04
c) What is stratified and cluster sampling? Explain with proper example. 04
8. a) Define carriers. How do you characterized different carriers of infectious disease? 1+3=04
b) Explain the host susceptibility of infectious disease process. 03
c) Write down some features of the sufficient component cause model. 03
9. a) What is random error? list out the source of random error. 02
b) Explain the different types information bias in Epidemiology. 04
c) How do you control confounding in conducting Epidemiological studies? 04
10. a) Define Screening. 01
b) Write down the principle or Wilson's criteria of screening. 04
c) What is Confounding Factor? Justify the statement " All valid data are reliable but all reliable data are not valid" 2+3=05

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination, 2023
Course Title: Extension Communication Management (Theory)
Course Code: ECM - 401(T)

Full Marks: 35

Time: 2 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question no. 1 is compulsory. Use separate answer script for each section. Split answers are strongly discouraged.)

SECTION-A

1. a) Define extension education and extension service. 2
b) Discuss the dimensions of extension. 3
2. a) Define organization. List the organizations involved in public health extension work in Bangladesh. 3
b) "Extension is a two-way channel"– Justify. 3
3. a) Define need and motivation. 2
b) How will you train up local leaders for effective implements of extension work? 4
4. a) List the elements of the learning process. Identify the most important element with justification. 2
b) Describe the psychomotor domain of Blooms Taxonomy using an example. 4

SECTION-B

5. a) Appraise the main features of an organization. 3
b) Classify organization with examples. 3
6. a) Define innovativeness and adaptor categories. 2
b) Differentiate between early adopters and laggards. 4
7. a) What is an innovation? 2
b) Discuss the major attributes of an innovation. 4
8. Write short notes on (any two) : 2×3=6
a) Result demonstration
b) Non-formal education
c) Extension program planning

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination, 2023
Course Title: Poultry Products Technology (Theory)
Course Code: PPT (T)

Full Marks: 35

Time: 2 Hours

(Figures in the right margin indicate full marks. Answer three (3) questions from each section, where question No.1 is compulsory. Use separate answer script for each section. Split answers are strongly discouraged.)

SECTION-A

1. a) Define: organic meat, poultry, GMP, Green goose, lean meat, table egg. 3.0
b) Duck egg or chicken egg which one is more nutritious-justify. 2.0
2. a) Describe preparation of three egg products. 3.0
b) Describe how would you manufacture dried meat products and its packaging system. 3.0
3. a) Define food additives. List common food additives with their mechanism of action, uses and examples. 4.0
b) State how would you preserve chicken meat for longer period of time. 2.0
4. a) What is squab meat? Give the chemical composition of squab meat. 2.0
b) Draw and identify the different parts of chicken egg. 2.0
c) Enlist the types of spoilage found in meat with the microorganism involved. 2.0

SECTION-B

5. a) List the utilization of various forms of egg in food products with example. 3.0
b) Define curing. Discuss sweet pickle curing method for the preservation of poultry meat. 3.0
6. a) Describe the losses of quality of chicken meat during various stages of preservation. 4.0
b) Poultry meat is more popular than other meat-justify. 2.0
7. a) Discuss the process of forming air cell in egg. 2.0
b) State the impact of fermentation on the quality of fermented meat. 2.0
c) Differentiate dark meat from white meat of broiler. 2.0
8. Write short notes on **any three** of the following: 3 × 2 = 6.0
 - a) Hurdle technology
 - b) Water glass method
 - c) Biltong
 - d) Bio-preservation of food
 - e) Lake

Chattogram Veterinary and Animal Sciences University

Faculty of Food Science and Technology

BFST 4th year 1st Semester Final Examination, 2023

Course Title: Marketing of Food Products and Business Management (Theory)

Course Code: MFP-401 (T)

Full Marks: 70

Time: 3 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question no. **1** and **5** are compulsory. Use separate answer script for each section. Split answers are strongly discouraged.)

SECTION-A

1. a) Distinguish between business and agribusiness. Compare among the three forms of business organization. 1+3=4
b) Classify manager by level and areas. Briefly discuss the management process. 2+3=5
c) What are the challenges and opportunities of agribusiness in Bangladesh? 2
2. a) Define planning along with its characteristics and limitations. 1+3=4
b) Develop a strategic marketing plan for food products. 4
c) What strategies can be used to manage risks in the food production process? 4
3. a) Distinguish between the concepts of (i) Organization and organizing (ii) Authority and power (iii) Horizontal and vertical integration 3
b) Briefly explain the key elements of organizational process. 5
c) Why is organizing important in a business? - Explain. 4
4. a) Explain how channel members add value for manufacturers and consumers of food products. 4
b) Which factors does a dairy company need to consider while designing its marketing channel for a new line of dairy products? 5
c) "Controlling is look back" - Discuss the statement. 3

SECTION-B

5. a) Distinguish between the concepts (i) Market and marketing, (ii) Business and commerce. 2
b) Briefly discuss the food marketing approaches. 6
c) Why marketing is costly and complex? Explain. 3
6. a) Why is market research important in agricultural marketing? 3
b) How does consumer perception impact purchasing decisions for food products? 4
c) Briefly discuss the marketing system of any food products in context of Bangladesh? 5
7. a) What are the challenges and opportunities of marketing plan-based foods? 4
b) What are some sustainable farming practices and certifications relevant to food marketing? 4
c) Discuss the impact of food labelling on consumer choices. 4
8. a) What do you mean by marketing efficiency and marketing margin? Why study of marketing cost and margin is essential in marketing system? 2+2=4
b) What factors affect the marketing cost and marketing margin? 4
c) How marketing efficiency can be enhanced in food marketing system? 4

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 4th year 1st Semester Final Examination, 2023
Course Title: Food Quality Control and Assurance (Theory)
Course Code: FQA (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** and **6** are compulsory. Use separate answer script for each section. Split answers are strongly discouraged.)

SECTION-A

- | | | |
|----|--|----|
| 1. | How does HACCP contribute to ensuring food quality in a food industry? | 05 |
| 2. | a) Write down the types and causes of food adulteration. | 04 |
| | b) Briefly describe the food adulteration in developing countries. | 03 |
| | c) Discuss the methods of food adulteration. | 03 |
| 3. | a) List out the principal parasites associated with food borne illness. | 02 |
| | b) Mention the occurrence, sources and effects of aflatoxin. | 02 |
| | c) Differentiate between primary and secondary metabolites. | 02 |
| | d) Make a table mentioning common marine toxins. | 04 |
| 4. | a) Briefly describe about the Hunter Lab colour value for colour measurement. | 04 |
| | b) How will you identify food colour? | 04 |
| | c) List out the example of natural colour. | 02 |
| 5. | a) Draw the schematic diagram of double Beam UV-Vis Spectrophotometer and discuss its different parts. | 05 |
| | b) State the principle of UV-Vis spectroscopy. | 03 |
| | c) Write down the types of spectroscopy. | 02 |

SECTION-B

- | | | |
|-----|---|----------|
| 6. | a) Mention the various methods used for the determination of quality of food. | 03 |
| | b) What do you mean by "Accreditation". | 02 |
| 7. | a) Write down the common physical tests used for food products. | 04 |
| | b) Draw a chart mentioning factors influencing quality of food. | 02 |
| | c) How environmental factors influence the quality of food? | 04 |
| 8. | a) Discuss about the key elements of quality. | 05 |
| | b) Briefly describe the history of ISO 9000:2008. | 05 |
| 9. | a) Mention the three components of flavour in sensory analysis. | 03 |
| | b) Briefly describe the preference tests in sensory analysis. | 03 |
| | c) What types of senses are used in sensory analysis. | 02 |
| | d) Describe the uses of sensory analysis in food industry. | 02 |
| 10. | Write short notes on: - | 2.5×4=10 |
| | i. TQM | |
| | ii. Statistical Quality Control | |
| | iii. Food intoxication and food infection | |
| | iv. Tristimulus colour values | |

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science & Technology
BFST 4th Year 1st Semester Final Examination, 2023
Course Title: 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 number **1 and 6** are compulsory. Use separate answer scripts for each section. Fractions of the questions must be answered together.)

SECTION-A

1. a) What do you mean by conventional energy sources? Mention some examples. 3
b) Distinguish between conventional and non-conventional sources of energy. 2
2. a) What is wind power? 2
b) Deduce an expression for the power available in the wind spectra. 5
c) Write down short notes on the following terms: (i) Wind turbine (ii) Tip speed ratio. 3
3. a) Describe the essential scientific principles for a successful Renewable energy system? 5
b) Explain the dynamics of tidal energy production and hence, describe the phenomena of spring and neap tides. 5
4. a) "Biomass is a renewable energy source"- justify your answer. Explain the different types of biomass resources with applications. 4
b) Give an explanation of the factors responsible for biomass fuels to be useful sources for energy production. 6
5. a) Draw the schematic of a simple tidal energy conversion plant to explain the mechanism of generation of electricity from tide. 5
b) Calculate the potential that can be developed from a tidal barrage power generation plant from the following specifications: The tidal range (the head) of tide at the location is 32 feet (≈ 10 m), The surface area of the tidal energy harnessing plant is 9 square kilometers, Density of sea water 1025.18 kg/m^3 . Also calculate the daily-average power generation if the conversion efficiency of the plant is 30%. 5

SECTION-B

6. a) Explain the technological and non-technological barriers and drivers for renewable energy deployment. 3
b) What is a solar PV module? 2
7. a) Explain the construction details and working principle of a solar distillation unit. Hence, mention the parameters affecting the solar still performance. 5
b) Write down the basic characteristics of solar photovoltaic (PV) system. Briefly explain the electron-hole pair generation process in a solar PV cell. 5
8. a) Calculate the energy content absorbed by a dry rock system from the underground geothermal resources. 6
b) Calculate the useful heat content per square kilometer of dry rock granite at a depth of 7 km. Take the geothermal temperature gradient at $40^\circ\text{C}/\text{km}$, the minimum useful temperature as 140 K above the surface temperature. 4

Chattogram Veterinary and Animal Sciences University

Faculty of Food Science and Technology

BFST 4th year 1st Semester Final Examination, 2023

Course Title: Refrigeration and Air Conditioning in Food Processing (Theory)

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

SECTION-A

1. Briefly describe the application of refrigeration in- 2.5×2=5
 - i) Food processing, preservation, and distribution system
 - ii) Comfort air conditioning system
2. a) Compare the working principle differences between vapor compression and vapor absorption system with figure and respect to the advantages of replacing the compressor with absorber and generator. 5
b) Define co-efficient of performance. Analyze the sources of troubles in a refrigeration system and their remedies. 1+4=5
3. a) Draw a skeleton psychometric chart and explain the following processes: 2.5×4=10
 - i) Mixing of two air streams
 - ii) Cooling and humidification
 - iii) Heating and dehumidification and
 - iv) Cooling and dehumidification
4. a) Define refrigerant. What are the desirable properties of a refrigerant must possess? 4
b) Show the effect of super heating and sub cooling on RE and P-H diagram. 6
5. a) Derive an expression for overall heat transfer co-efficient in a simultaneous convection-conduction-convection heat transfer through the pipes having three layers. 5
b) Calculate the heat loss per unit length from a 16cm steel pipe of 4mm thickness, carrying saturated steam and insulated with 4cm thick layer of asbestos and 2cm thick outer layer of magnesia. The inside film co-efficient is 3000 kcal/m²hr °C and outside film co-efficient is 12 kcal/m²hr°C. The ambient and steam temperature are 35°C and 250°C respectively and K (pipe)=300 kcal/mhr°C, K (asbestos)=20 kcal/mhr°C, and K (magnesia)=15 kcal/mhr°C. 5

SECTION-B

6. Design the possible different arrangement of summer air conditioning system for hot and dry outdoor conditions. 5
7. a) Write down the working principle of a cascade refrigeration system. 5
b) Define the following terms: DBT, WBT, RH and dew point temperature. 2
c) Explain the importance of "Effective Temperature" in an air-conditioning system. 3
8. a) Mention the sources which contribute to the sensible and latent heat loads in an air conditioning system. 5
b) List out the factors governing the optimum effective temperature. 5
9. a) Summarize the initial cooling methods for cold storage preservation and describe the forced air cooling methods for preservation chambers. 6
b) Write short notes on the following terms: i) Reverberation time and ii) Noise nuisance. 2×2=4
10. a) Mention the factors which are influenced by building acoustics. Write down the characteristics of sounds. 2+3=5
b) Write short notes of the followings: 5
 - i) Steady state heat transfer
 - ii) Water as a refrigerant
 - iii) Psychometric properties of air
 - iv) Refrigeration effect and
 - v) Adiabatic saturation

density of the rock, $\rho_r = 2700 \text{ kgm}^{-3}$, Specific heat capacity, $S_r = 820 \text{ Jkg}^{-1}\text{K}^{-1}$. If the water flow rate is $1 \text{ m}^3\text{s}^{-1}\text{km}^{-2}$, find the time constant for useful energy extraction? Also find the useful heat extraction rate after 5 years.

9. a) What do you mean by the term “Coefficient of Performance” for a wind turbine? Explain Betz Criterion and using this concept show that, the Coefficient of Performance for a wind turbine is 59% maximum? 8
- b) Write short notes on (i) Geothermal energy (ii) Geothermal resources. 2
10. a) Derive an expression for the optimal rotational frequency of rotor blades in a wind stream to extract maximum power. 4
- b) How can we utilize the geothermal resources for human development? 3
- c) Discuss the factors affecting the efficiency of a solar PV cell. 3