Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July- December, 2017)
Subject: Food Safety and Risk Analysis
Course Code: FSA-502

Full Marks: 40 **Time: 02 hours**

[Figures in the right margin indicate full marks. Answer four (4) questions. **Split answer is not allowed.**]

1.	a)	What do you mean by ISO 22000 and ISO 22000:2005?	3
	b)	What are the requirements of ISO 22000?	3
	c)	Write down the principles of food safety management system.	4
2.	a)	What is HACCP?	2
	b)	Write down the principles of HACCP.	4
	c)	What are the benefits of applying HACCP in food industries?	4
3.	a)	What are the components of risk analysis?	2
	b)	Evaluate the relation between risk analysis and modern food safety.	4
	c)	Write down the conditions necessary for risk analysis.	4
4.	a)	Define risk management.	2
	b)	Draw a model for risk management.	4
	c)	How to develop a risk profile for risk management? Describe.	4
5.	a)	What is risk communication?	2
	b)	Write down the factors those influence the perception of risk.	4
	c)	List out the elements of an effective risk communication.	4

Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July- December, 2017)
Subject: Food Quality Assurance
Course Code: FQA-502

Full Marks: 40 **Time: 02 hours**

[Figures in the right margin indicate full marks. Answer four (4) questions. Split answer is not allowed.]

1. a) What do you mean by the term 'Quality'? Briefly discuss about some of the basic tools of Quality Assurance (QA). 01+05

   b) Why does application of GMP is important in food industry? 02

   c) Write down principles of Total Quality Management (TQM). 02

2. a) Shortly mention how a Gas Chromatograph works. Discuss applications and advantages of Gas Chromatography. 01+02+02

   b) Discuss about different types of HPLC. 05

3. a) Discuss about five drivers of Research & Development (R&D) in the food and beverage industry. 05

   b) Elaborately mention some of the Institutes those are contributing to present research and development in food sector in Bangladesh. 05

4. a) Define the following term 05
   Hazard, CCP, Risk, Safety, Severity

   b) Discuss in details factors those are responsible for microbial growth in food. 05

5. a) Why NP-HPLC (Normal Phase HPLC) is superior to RP-HPLC (Reverse Phase HPLC)? 03

   b) Mention applications of UV spectroscopy. 04

   c) Write down basic principles of Atomic Absorption Spectroscopy (AAS). 03

Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July- December, 2017)
Subject: Product Development and Project Management
Course Code: PDM-502

Full Marks: 40 **Time: 02 hours**

[Figures in the right margin indicate full marks. Answer four (4) questions. Split answer is not allowed.]

1. a) Suppose you are a project director of Government Livelihood Improvement Project. Now, briefly discuss the principles of project management. 06

   b) How do you measure a project success rate? 04

2. a) Imagine, you are a research and development officer of a renowned food industry and you want to produce a new product. Now, what are the factors you should consider before starting its production? 06

   b) Design the drivers of innovative products. 04

3. a) Briefly explain stage-gate process. 05

   b) Criticize about stage-gate process. 05

4. a) How you evaluate a project by SWOT. 05

   b) Summarize the roles and responsibilities of a project manager. 05

5. a) Elaborate the basic steps of stakeholder analysis. 05

   b) Design the basic phases of project management. 05

Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2017)
Subject: Food Security
Course Code: FSE-502

Full Marks: 40 **Time: 02 hours**

[Figures in the right margin indicate full marks. Answer four (4) questions. **Split answer is not allowed.**]

1. a) Define the term 'Food Security'. What approaches should government take to ensure Food Security? 2+4

   b) Discuss how different stake holders can contribute in Food Security. 4

2. a) What do you understand by the term 'Sustainable Development'? Can biofuels support the agricultural sector and help to meet the goal sustainable development? 2+4

   b) Write a short note on Genetically Modified Crops (GMC). 4

3. a) Briefly discuss how food biotechnology can improve food production. 6

   b) Discuss Food Security in respect to Bangladesh. 4

4. a) Briefly discuss how variation in climate can affect different Food Source. 6

   b) Why access to food is not equal to all? Explain. 4

5. a) What is IPCC? Discuss its objectives and roles in ensuring food security. 5

   b) 'Sustainable Development of a country cannot be achieved without Food Security'- Justify. 5

Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July- December, 2017)
Subject: Applied Engineering Chemistry
Course Code: AEC-502

Full Marks: 40 **Time: 02 hours**

[Figures in the right margin indicate full marks. Answer four (4) questions. Split answer is not allowed.]

1. a) Discuss in detail about the operation & material of construction of 2.4-Shell and Tube type heat exchangers. 07

   b) What are the advantages of this type heat exchanger? 03

2. a) State Bernoulli`s equation. How can you determine whether a flow is laminar or turbulent? 04

   b) Discuss the aspects of filter clogging and backwashing in industrial sector. Why these operations are required in industrial applications? 06

3. a) Discuss about Stoichiometry, limiting and excess reactants with example. 03

   b) An aq. Solution of NaOH 10% by mass is desired to produce an aq. Solution of 4% NaOH by dilution with water. Calculate the mass ratio of water and final product on the basis of feed solution. Also determine the feed rate of 10% solution and water needed to produce 1155 kg/min of the 4% solution. 07

4. a) Define energy and hydraulic grade line. How does head loss occur in pipe flows? 04

   b) Write down the working principle of reciprocating pumps. What are the advantages of it? 06

5. a) What is cavitation? What are the main causes of cavitation & how does this problem can be resolved? 05

   b) Discuss about NPSH. Why do we use series & parallel connections in pump operations? 05

Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July- December, 2017)
Subject: Food Quality Control
Course Code: FQC-502

Full Marks: 40 **Time: 02 hours**

[Figures in the right margin indicate full marks. Answer four (4) questions. **Split answer is not allowed.**]

1.	a)	Define Spectroscopy.	2
	b)	State the principle of spectroscopy.	3
	c)	Sketch diagram of HPLC with working principle.	5
2.	a)	What do you mean by QC and QA?	2
	b)	Discuss about the principle of TQM	4
	c)	Write down the principles of HACCP with implementation.	4
3.	a)	Define Quality Reliability.	2
	b)	Describe the methods of Quality Evaluation.	5
	c)	"Preservatives are adulterants"- is it true?- Explain.	3
4.	a)	Discuss about the sensory evaluation.	6
	b)	How can you determine the presence of microorganisms in food chemically?	4
5.		Short note (any two)	5×2=10
	a)	Deming cycle	
	b)	GLP	
	c)	GMP	

Chittagong Veterinary and Animal Sciences University

Dept. of Applied Food Science and Nutrition

MS in Applied Human Nutrition and Dietetics

July- December Final Examination, 2016

Course Name: Nutrition in Emergencies

Course Code: NUE-502

Full Marks: 40, Time: 2 hours

Answer any Four (4) questions from the listed below

1. a) Define Nutritional Emergency. 2

   b) What are the causes of Nutritional Emergency in our country? 3

   c) Give an account of historical perspectives of the disaster situation in context of Bangladesh. 5

2. a) Discuss the role of nutritional, health and socioeconomic data on early warning. 5

   b) Draw and narrate the framework for disaster relief-needs assessment. 5

3. a) What is disaster management? 2

   b) Enumerate the role of a Nutritionist in Disaster Management. 3

   c) Outline a design of a nutrition intervention program in a community. 5

4. a) List out the name of different types of emergency feeding program. 2

   b) Give a summary of General Food distribution and Therapeutic Feeding. 3+3

   c) What types of nutrient deficiencies may be occurred during emergency? 2

5. a) How do you can assess nutritional status of mass people during emergency? 3

   b) Describe the role of government and non – government organization in mitigating nutrient deficiency in a disaster prone area. 7