

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2019)
Course Title: 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 answers are discouraged.]

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| 1 | a) Briefly explain the principles of project management. | 05 |
| | b) Elaborate the phases of project management. | 05 |
| 2 | a) Explain the major approaches of project management. | 07 |
| | b) Design the drivers of innovative products. | 03 |
| 3 | a) Briefly explain stage-gate processes. | 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 |

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2019)
Course Title: 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 answers are discouraged.]

- 1 a) What do you mean by sensory analysis? Discuss about the advantages and disadvantages of sensory analysis. 06
- b) Enumerate the ways to prevent foreign matters in food. 04

- 2 a) How do the following physical attributes can matter for quality and safety of food? 06
Color, Shape, Volume, Viscosity
- b) Discuss about the safe food handling procedures from market to consumer. 04

- 3 a) Write down the factors on which critical limit should be based upon. 03
- b) Briefly discuss the guidelines for applying HACCP principles. 07

- 4 a) Define the following terms: 05
Quality, Quality Assurance, Quality Control, GMP, TQM
- b) Describe the functions of QA according to IFT. 05

- 5 Write a short note on the following: 2.5X4=10
FT-IR, HPLC, NMR, FAO

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2019)
Course Title: 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 answers are discouraged.]

1. a) What is HACCP? 02
- b) What are the principles of HACCP? Describe. 04
- c) Write down the benefits of applying HACCP in food industries. 04
2. a) What do you mean by ISO-22000 and ISO-22000:2005? 03
- b) Write down WHO's five principles of food safety. 03
- c) Describe down 2 principles of food safety management system. 04
3. a) Define risk management. 02
- b) Write down the types of information included in a risk profile. 04
- c) How to develop a risk profile? Describe. 04
4. a) Define risk communication. 02
- b) What are the factors that influence perception of risk? 04
- c) Write the elements of an effective risk communication. 04
5. a) Classify risk assessment process. 02
- b) What are the characteristics of a good risk assessment process? Describe. 04
- c) Write a short note on "food safety in Bangladesh". 04

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2019)
Course Title: 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 answers are discouraged.]

1. a) Elaborate the impacts of antimicrobial residue in agricultural food products and its impacts on human health. 07
- b) Narrate the activities of National Food Safety Laboratory. 03

2. a) Design the working principle of Atomic Absorption Spectrophotometer (AAS). 05
- b) Discuss different types of atomization techniques in AAS. 05

3. a) Enlist different food preservatives with their mode of actions. 07
- b) Briefly explain the negative effects of food preservatives in human life. 03

4. a) Design the principle of chromatographic technique. 04
- b) Explain the applications of GC-MS in food analysis. 06

5. a) How do you evaluate the quality of new product? 06
- b) Elaborate different approaches of quality control. 04

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2019)
Course Title: Research Methodology and Case Studies
Course Code: RMCS– 502

Full Marks: 40

Time: 02 hours

[Figures in the right margin indicate full marks. Answer four (4) questions. Split answers are discouraged.]

- 1 a) What do you mean by research design? Differentiate between research methodology and research design. Illustrate your answer with suitable example. 05
- b) Enumerate the characteristics of good research design and indicate potential problems in preparing a research design. 05

- 2 a) Classify the methods of research. Give various ways of classifying methods of research. Differentiate between longitudinal and cross-sectional approach to educational research and illustrate your answer with examples. 07
- b) Define the term 'Experiment'. Differentiate between Research Design and Experimental design. 03

- 3 a) Define the term 'Research'. Enumerate the characteristics of research. 05
- b) Describe the various classification of research, Differentiate between fundamental research and action research. Elaborate your answer with examples. 05

- 4 a) Describe the steps of research. Enumerate the objectives of action research. 05
- b) Give the sources of research problem. How a problem is identified? Enumerate the criteria for the selection of a problem. 05

- 5 a) Define the term 'Hypothesis'. Differentiate among assumption, postulate and hypothesis. 05
- b) Distinguish between probability sampling and non-probability sampling. Mention the assumptions of a probability sampling. 05

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2019)
Course Title: 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 answers are discouraged.]

- 1 A common salt solution contains 24% NaCl and 76% water. To recover 80% of the dissolved salt, it is proposed to evaporate a part of the water and then carry out crystallization at a temperature of 20°C. At 20°C the solubility of NaCl in water is 36 g/100g of water. Calculate 10
 - a) the weight of water evaporated per 1000 kg of solution.
 - b) Weight of mother liquor left after crystallization.

- 2 a) Write the working principle of centrifugal pumps. What are the advantages of it? 06
 - b) Why and where we use parallel connections in pump operations? 04

- 3 a) Sketch and briefly discuss pump characteristics curve. 06
 - b) Why and where we use series connections in pump operations? 04

- 4 An aqueous solution of sugar contains 40% sucrose by mass. It is desired to produce a 12% solution by diluting the stream of 40% solution with a stream of pure water. Calculate the ratios of pure water and solution in the system. Also calculate the feed rates if 3tons/hr of 12% solution is required. 10

- 5 a) Discuss in detail about 1, 2-Shell-and-tube heat exchanger. 05
 - b) How waste steam can be utilized in heat exchangers? 05