

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2021)
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.]

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|---|---|--------------|
| 1 | a) What is quality? Write down principles of quality control. | 06 |
| | b) Discuss about general awareness and role of management practices in quality control. | 04 |
| 2 | a) Illustrate the ways to determine microorganism in food. | 05 |
| | b) Write in brief about statistical quality control in food industry. | 05 |
| 3 | a) Design the working principle of Atomic Absorption Spectrophotometer (AAS). | 05 |
| | b) Discuss different types of atomization technique in AAS | 05 |
| 4 | a) What is Deming Cycle? List down Deming's 14 points for total quality management. | 06 |
| | b) Define Total Quality Management. Mention its principles and application | 04 |
| 5 | Write a Short note on the following: | 3.5+3.5+3=10 |
| | Good Laboratory Practices, Codex Alimentarius Commission, ISO: 22000 | |

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2021)
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 answers are discouraged.]

1. An aqueous solution of sodium hydroxide contains 40% NaOH by mass. It is desired to produce an 16% NaOH solution by diluting a stream of the 40% solution with a stream of pure water. 10
a) Calculate the ratios (g H₂O/g feed solution) and (g product solution/g feed solution).
b) Determine the feed rates of 40% solution and diluting water needed to produce 2500 lbm/min of the 16% solution.
2. A common salt solution contains 24% salt and 76% water. To recover 80% of the dissolved salt, it is proposed to evaporate a part of the whole water and then carry out crystallization at a temp. of 20°C. At 20°C the solubility of salt in water is 36 g/100g of water. Calculate the weight of water evaporated per 1000kg of solution. Also calculate the weight of mother liquor left after crystallization. 10
3. a) Why pumps are used to transfer liquids? Enlist the factors that influence the choice of pump. 04
b) Write the working principle of centrifugal pumps. What are the advantages of it? 06
4. a) What do you mean by Heat Exchangers and why they are used in industries? 03
b) Discuss about the types of heat exchangers. Write the principle of Shell- and-tube heat exchanger. 07
5. a) Why we use series & parallel connections in pump operations? 04
b) What is cavitation? What are the main causes of cavitation & how we can prevent this? 06

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2021)
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 answers are discouraged.]

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| 1. a) | What do you mean by ISO-22000 and ISO-22000:2005? | 02 |
| b) | What is WHO? Write down WHO's five principles of food safety. | 04 |
| c) | Write down five adulterants of food items with their health hazards. | 04 |
| 2. a) | What is HACCP? Draw a logic sequence for the application of HACCP. | 05 |
| b) | Briefly describe about food safety in Bangladesh and its current challenges. | 05 |
| 3. a) | What are the components of risk analysis? | 02 |
| b) | Evaluate the relation between risk analysis and modern food safety system. | 04 |
| c) | Write down the conditions necessary for the risk analysis. | 04 |
| 4. a) | Define risk communication. | 02 |
| b) | What are the factors that influence the perception of risk? | 04 |
| c) | Write down the elements of an effective risk communication. | 04 |
| 5. a) | Define risk management. | 02 |
| b) i) | Write down the types of information included in risk profile | 08 |
| ii) | How to develop a risk profile | |

Chittagong Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2021)
Subject: Research Methodology and Case Studies
Course Code: RMS-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) List out the types of research according to criteria. Mention 07 steps of research process. 05
b) Write down the characteristics of research. 05
2. a) Describe the advantages and limitations of survey method. 05
b) Explain the research problem step no. 08: "Reporting the findings". 05
3. a) Write down the difference between a concept and a variable. List out some examples of concepts, indicators and variables. 05
b) Make a table mentioning potential pitfalls and mitigating actions when undertaking case study research. 05
4. a) Describe a complete process for writing a research proposal. 06
b) What do you mean by patents? Why are patents necessary? 04
5. Write short notes on: 10
 - a) Check List.
 - b) Interview.

Chattogram Veterinary and Animal Sciences University
Department of Applied Chemistry and Chemical Technology
M.S. in Food Chemistry & Quality Assurance (July-December, 2021)
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 is sensory analysis? Discuss about the advantages and disadvantages of sensory analysis. 06
- b) What is triangle and duo-trio test? 04
2. a) What do you mean by Quality Assurance? Discuss its aim along with factors affecting quality assurance. 05
- b) Discuss about principles of quality management. 05
3. a) What is chromatographic analysis? Write down principles and application of chromatographic analysis. 05
- b) Write down principles and application of gas chromatography 05
4. a) Rewrite the ways to exclude entry of flying insects in the food environment. 06
- b) Discuss in brief prospect of food sector in Bangladesh. 04
5. Write a short note on the following: 3.5+3.5+3=10
 HACCP, GMP, ANSI

Chattogram Veterinary and Animal Sciences University
MS in Food Chemistry and Quality Assurance
July- December Semester Final Examination-2021
Course Title: Product Development and Project Management
Course code: PDM- 502

Total Marks: 40

Time: 2 hours

Answer any four (04) questions. Figures in the right margin indicate full marks.

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|---|----|--|----|
| 1 | a. | Explain the principles of project management. | 06 |
| | b. | List the functions of project leader and project manager. | 04 |
| 2 | a. | Briefly discuss the stages of new food products development. | 07 |
| | b. | Explain the drivers of innovative products. | 03 |
| 3 | a. | “Market research can be used at all stages of product life cycle”- explain it. | 06 |
| | b. | Elaborate the merits of stage-gate process. | 04 |
| 4 | a. | How do you measure product success and failure rate in a food industry? | 07 |
| | b. | Categories different new products with example. | 03 |
| 5 | a. | Elaborate the basic steps of stakeholder analysis. | 05 |
| | b. | How do you evaluate a project by SWOT? | 05 |