

CHATTOGRAM VETERINARY AND ANIMAL SCIENCES UNIVERSITY, CHATTOGRAM

MS in Fishing and Post-Harvest Technology

July-December Semester, Final Examination-2023

Course Code: **SFB-502 (T)**, Course Title: **Seafood Biochemistry**

Total Marks: 40; Time: 2 hours

Answer any four (04) of the following questions.

1. a) "Fish protein is considered a balanced protein for the human body"- Justify 5.0
the statement. What are the factors influencing the seasonal variation in fish?
- b) Briefly analysis the value chain of seafood sector in Bangladesh. 5.0
2. a) Briefly discuss the thermal decomposition of fish lipids. Write down the 5.0
major problems associated with chilled and frozen marine products during storage.
- b) Write in brief about myosin, and paramyosin of fish muscles. Give a 5.0
demonstration of the extraction procedure of fish muscle protein.
3. a) Write down the composition of vitamins in different organs of marine fish. 5.0
Write down the roles of vitamin E during the processing and storage of fatty fish.
- b) Is there any relationship between water content and fat content of a fish? 5.0
Give three (3) examples of high-water content and low lipid content of a fish.
4. a) How fish get their unique flavor? Briefly describe the available fish 5.0
compounds responsible for fish flavor development.
- b) Describe a pathway of human intoxication with marine shellfish by toxin 5.0
accumulation process. Write down the control and prevention method for natural toxins in seafood.
5. a) Write down the role of proximate composition in fish quality and 5.0
processability of fish.
- b) Where do contaminants come from in fish? What are the risks of eating 5.0
seafood contaminated with mercury and PCBs?

CHATTOGRAM VETERINARY AND ANIMAL SCIENCES UNIVERSITY, CHATTOGRAM

MS in Fishing and Post-Harvest Technology

January-June Semester, Final Examination- 2023

Course Code: ^F~~ABT-502(T)~~, Course Title: ^{Fishery}~~Advanced Fish By-products Technology~~

^DTotal Marks: 40; Time: 2 hours

Answer any 04 (four) from the following questions:

1. a) What do you mean by fishery by-products? Write down the importance of studying Fishery by-products Technology. Briefly discuss the scope of fishery by-products in the industry. 5.0
b) Describe the impact of fishery by-product utilization on fishery resource management. 5.0
2. a) Illustrate the processing method of fishmeal. Write down the significance and application of fishmeal in the global market. 5.0
b) Write down the protocol of the wet reduction process of fish oil and write the significance of fish oil for human health. 5.0
3. a) What is fish peptide? What is the nutritive value of fish peptide? 5.0
b) Describe the nature of Fish Protein Concentrate (FPC) and conduct a comparative analysis between FPC and fish peptide powder, focusing on their texture, color, bitterness, nutritional value, and overall health benefits. 5.0
4. a) Write down the application and processing techniques of pearl essence. 5.0
b) Define co-products and by-products, elucidate the distinctions between caviar and roe, and detail their respective processing techniques. 5.0
5. a) Describe the process of extracting carrageenan from seaweeds and outline the commercial importance of Agar, Alginate, and Carrageenan. 5.0
b) Define functional fishery products, provide examples of these products, and distinguish between a standard fishery product and its functional counterpart. 5.0

Chattogram Veterinary and Animal Sciences University, Chattogram
Department of Fishing and Post-Harvest Technology
M.S. in Fishing and Post-Harvest Technology
Final Examination; July-December Semester, 2023
Course Code & Name: AFP 502 (T) & Advanced Fish Processing
Time: 2 hour; Full Marks: 40

Answer any 5 (Five) from the following questions

1. What do you know about BRC? Discuss the responsibilities of BRC to ensure the quality of fish and fishery products. 8
2. Discuss briefly about the standard methods for the preparation of 4 (four) exportable fishery products of Bangladesh. 8
3. Discuss briefly about the technological, biochemical and bacteriological problems associated with different fishery products in Bangladesh. 8
4. What do you know about the Standards and Specifications? Discuss the importance of development of National and International Standards in food safety aspects. Briefly describe the role BSTI in maintaining product quality. 8
5. Define Fish value chain. "Shelf-life of different processed fish and fishery products are directly related with the quality parameters of raw material"-Justify. 8
6. What do you know about the handling of raw fish? Discuss the factors affecting the raw materials quality of fish. Briefly describe the role of fish supply-chain and value-chain in reducing quality loss of fish. 8

Chattogram Veterinary and Animal Sciences University, Chattogram
Department of Fishing and Post-Harvest Technology
M.S. in Fishing and Post-Harvest Technology
Final Examination, July-December Semester 2023
Course Code & Name: BFP 502 (T) & Biotechnology in Fish Processing
Time: 2 hour; Full Marks: 40

Answer any 5 (Five) from the following questions:

1. What do you know about fish sauce? Discuss briefly the enzymatic and microbial changes in fish sauce during fermentation. 8
2. Discuss briefly the modern food packaging. "Packaging helps in shelf-life extension and pathogen control"- Justify. 8
3. Define proteases. Discuss the criteria need to be considered for the selection of proteases in fish industries. Briefly describe the traditional applications of proteases in seafood industries. 8
4. Describe briefly Rapid Method and Automation for seafood microbiology. Discuss the alternative method for the viable cell count procedure. 8
5. What do you know about the composition of crustacean wastes? How you will manage these wastes through proper utilization? Discuss the future trends and challenges to utilize the crustacean wastes. 8
6. What do you know about waste-water recycling in seafood industries? Discuss briefly recovery of protein, colour and flavour compounds of fish processing industry. 8

Department of Fishing and Post Harvest Technology, CVASU

M S in Fishing and Post Harvest Technology

Final Examination, July – December Semester 2023

Course Code & Name: SWB 502(T) Seaweed Biotechnology

Full Marks: 40; Time :2 hours

Answer any 4 (FOUR) of the following questions:

1. What is protista? Classify seaweed and write scientific and common name of 10 (Ten) species from each category. Give a brief overview on tissue culture of seaweed.
2. How will you correlate seaweed and biotechnology? How will you produce agar, algin and alginates from seaweed?
3. Classify *Laminaria sp.* How will you culture *Laminaria sp.* in open sea?
4. How will you consider seaweed as an alternative energy source? Give a detail extraction protocol of industrial biofuel from seaweed.
5. Give a detail overview on commercial culture techniques of *Porphyra spp.* in natural environment.
6. List down different industrial products manufacture from seaweeds. How will you establish a seaweed based processing industry?
7. How will you get benefit from seaweed meal if you keep in your daily diet? Write down common nutrients profile in popular dietary seaweeds.
8. How do you know about bioremediation? Do you think seaweed can be a potential candidate for bioremediation in sea ranching? Give an effective bioremediation protocol in marine environment.

Chattogram Veterinary and Animal Sciences University, Chattogram
MS in Fishing and Post-Harvest Technology
July-December Semester, Final Examination- 2023
Course Code: AQI-502(T), Course Title: Advanced Fish Quality Control and Inspection
Total Marks: 40; Time: 2 hours

Answer any 04(four) from the following questions

1. a) Write down some points where hazard can be prevented, eliminated and reduced to acceptable levels. 5.0
b) Prepare a HACCP worksheet for *Sardinella fimbriata* in a fish processing industry by identifying the Critical Control Points (CCP). 5.0

2. a) Briefly describe the listing protocols of a fish processing establishment. 5.0
b) Write short note on FRCP. 5.0

3. a) Narrate the evaluation criteria of a processing plant which are checked during full verification. 5.0
b) Classify fish processing establishment based on risk management. 5.0

4. a) Write down the organogram of FIQC. 5.0
b) Describe different types of verification practiced in Bangladesh. 5.0

5. a) Write down the compliance of facilities and conditions of a depot. 5.0
b) List down potential hazards in fishery products with their control measures. 5.0