RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (four-year) Degree in Applied Sciences
Fourth year – Semester II Examination – February / March 2019

ZOO 4310 – POST HARVEST TECHNIQUES IN FISHERIES

Time: Three (03) hours

Answer ALL questions.

1. Comment on the following with suitable examples.

   a) The consumption of fish plays a significant role in human nutrition and health. **(60 marks)**

   b) The physical shape of a fish affects the rate of spoilage. **(20 marks)**

   c) Effect of dark muscles on the quality of fish. **(20 marks)**

2. a) Explain briefly the factors which influence the chemical composition of fish. **(30 marks)**

   b) "Rigor mortis affects the biological, chemical and physical properties of fish". Explain and discuss the rigor mortis process with reference to the above statement. **(40 marks)**

   c) Write a brief account on effects of filleting before and after rigor mortis. **(30 marks)**

3. a) "The shelf life of fish products can be increased by decreasing water activity in fish muscle." Discuss the above statement using suitable examples. **(30 marks)**

   b) Explain how to produce high quality maldive fish. **(30 marks)**

   c) Write a concise account on fishery by-products. **(40 marks)**

4. a) Chilled Seawater (CSW) and Refrigerated Seawater (RSW) are effective methods in fish preservation. Describe the advantages and disadvantages of CSW and RSW when compared with normal icing of fish. **(40 marks)**

b) Comment on the following statements.

i. Fish caught from a trawl net are of better quality than that caught on long line.

ii. Slow freezing results in better fish quality than fast freezing. **(30 marks)**

5. a) List the different types of naturally occurring fish and shellfish poisons. **(25 marks)**

b) Briefly describe the high risk groups of consumers/fishermen who are affected by fish and shellfish poisoning. **(25 marks)**

c) Write a detailed account on Scombroid poisoning. **(50 marks)**

6. a) The reduction of trimethylamine oxide (TMAO) in marine fish muscle can be expressed using following chemical equation.

$(CH_3)_3 NO \rightarrow (CH_3)_2 NH + HCHO$

Explain the commercial significance of this reaction. **(20 marks)**

b) Briefly explain **seven (07)** principles of HACCP. **(30 marks)**

c) Discuss the chemical and microbiological hazards in the fish processing industry. **(50 marks)**

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