

**UNIVERSITY OF AGRICULTURE, ABEOKUTA**  
**COLLEGE OF ENVIRONMENTAL RESOURCES MANAGEMENT**  
**DEPARTMENT OF AQUACULTURE AND FISHERIES MANAGEMENT**  
**SECOND SEMESTER EXAMINATION 2009/2010 SESSION**

**FIS 302: Fish Nutrition**

**INSTRUCTION: Answer Three (3) Questions. At least one question from each section**

**TIME: 2 Hours**

**SECTION A**

1a (i). Define Fish Formulation

(ii). State the requirements for fish feed formulation

b. Formulate a ration containing 40% crude protein (C.P) using fish meal (67% C.P), Soyabean meal (40% C.P) and groundnut cake (45% C.P) in the ratio 2:2:1. Use maize (10% C.P) as energy source. Fixed ingredients are: Oil = 2% C.P, Vit Premix = 1%, methionine = 0.5%, lysine = 0.5%, DPC = 0.5% and Salt = 0.25%. Calculate weight and protein contributions of each ingredient.

2a. Outline the merits and demerits of point feeding of fish.

b. Describe how you will calculate the amount of feed for 10,000 fish stocked using 3% body weight of feed supply.

**SECTION B**

3a. Define the term "Nutrient".

b. With named examples, classify nutrients required by finfish.

c. List three sources each of each class of nutrient in b above.

4a. Through aquaculture nutrition, the quality of fish can be controlled. Discuss.

b. Giving examples differentiate between mono-and disaccharides.

5a. Discuss the term "essential" with respect to amino acids and fatty acids.

b. Name five essential amino acids

c. With one example each differentiate between simple and compound Lipids.