****

 **NATIONAL OPEN UNIVERSITY OF NIGERIA**

**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**

 **Faculty of Science**

 **JULY 2017 EXAMINATION**

**COURSE CODE: BIO 410**

**COURSE TITLE: FISHERIES AND AQUACULTURE**

**TIME ALLOWED: 2HOURS**

**INSTRUCTION: QUESTION ONE IS COMULSORY AND ANY OTHER THREE QUESTIONS.**

1. a.Outline the steps or procedures for pond management **(8marks**)

b. State **four** factors determining the shape of a fish pond **(4marks**)

c. State **three** factors that determine the size of a fish pond **(3marks)**

 **d.** Distinguish between a bony and cartilaginous fish **(4marks)**.

 e. Write short notes on the following basic organs and systems in fish:

1. Integument **(2marks)**
2. Respiratory apparatus **(2marks)**
3. Lateral line system **(2marks)**

2. a. What do you understand by feed formulation? **(4marks)**

 b. Explain the steps in feed formulation **(4marks)**

 c. With an example, explain the term “best-by-technique” in diet formulation **(7marks)**

3. a. Outline **six** major objectives of food studies in fisheries **(6marks**)

 b. Mention **six** different methods of analyzing food of fishes? **(3marks)**

 c. Explain any **two** of these methods of analyzing food of fishes **(6marks**)

4. a. What you understand by fish culture **(4marks**)

 b. Give **five** reasons why we practice aquaculture **(5marks**)

 c. Based on the level of manipulation of the environment, explain **three** classifications of

 techniques involved in fish culture **(6marks**)

5. a. State **six** significance of age and growth studies in fishes **(3marks)**

 b. Outline **eight** steps involved in age and growth studies of fishes **(4marks**)

 c. There are important forms or parameters in which the growth of fish is estimated. Explain these parameters/form (**3marks)**

 d. Mention **five** methods of studying growth of a fish **(5marks)**