



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

FIRST YEAR SECOND SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE IN
FISHERIES AND AQUATIC RESOURCES AND BACHELOR
OF SCIENCE IN AQUATIC RESOURCES CONSERVATION
AND DEVELOPMENT WITH INFORMATION
TECHNOLOGY

MAIN CAMPUS

AFN 102: ICHTHYOBIOLOGY AND ICHTHYOTAXONOMY

Date: 8th June, 2017

Time: 3.30 - 6.30pm

INSTRUCTIONS:

- Answer Question ONE in section A and any other THREE in section B.



SECTION A: Answer ALL questions in this section (40 marks)

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1. a) Outline the importance of fish to humans (2 marks)
b) Distinguish between taxonomy and nomenclature in ichthyology (2 marks)
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2. State any FOUR objectives of systematics in ichthyology (4marks)
3. Describe the general characteristics of all fish species (4 marks)
4. Distinguish between endemic and exotic fishes in regard to Lake Victoria, giving two examples in each case. (4 marks)
5. Distinguish between Lotic and Lentic systems giving two examples of fish species inhabiting each of them (4 marks)
6. Interpret the following fish fin taxonomic formulae (4 marks)
a) DIV,13; P₁3; P₂ 4; AII,7, C49
b) DIV,8; P₁ II,8; P₂II,7; AIV,8; C38
7. a). Fish specimen are usually collected during study tours. Explain the purpose such collections (1 marks)
b) During a field exercise, you are tasked to preserve fish specimen using formaldehyde. Estimate the quantity of water you will require to dilute 5 litres of 10% Formaldehyde to have 4% formaldehyde solution. (2 marks)
c). Explain shortcomings of using formaldehyde in preservation of fish specimen (1 Marks)
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8. a) List any TWO subclasses of Osteichthyes (2 marks)
b) Distinguish between paired and unpaired fins stating their uses in typical fish (2 marks)
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9. Using a sketch diagram, distinguish between the following features in fish
- a) Terminal mouth and inferior mouth (2 marks)
 - b) Forked caudal fin and truncated caudal fin (2 marks)
10. Use diagrams to distinguish between the Ctenoid scales and Cycloid scales in fish (4 marks)

SECTION B: Answer any THREE questions from this section (30 marks).

11. a) Illustrate the external features of a typical Osteichthye (7 marks)
- b) Outline any SIX general characteristics of the Osteichthye (3 marks)
12. Discuss the use of morphological features in fish taxonomy (10 marks)
13. Describe the following classes of extant fishes outlining key distinguishing features
- a) Cephalospidomorphi (5 marks)
 - b) Chondrichthyes (5 marks)
14. Explain any FIVE taxonomic differentiation methods used in fish systematics other than the use of morphological features (10marks)