**TECHNICAL UNIVERSITY OF MOMBASA**
FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES
**UNIVERSITY EXAMINATION FOR:**
**BACHELOR OF SCIENCE IN FISHERIES AND OCEANOGRAPHY**

**BSFO 16S/YEAR 2/ SEMESTER 1**

**AFO 4202: COMPARATIVE ANATOMY AND PHYSIOLOGY OF FISH**

**SPECIAL/ SUPPLIMENTARY EXAMINATIONS**

**SERIES: SEPTEMBER 2018**

**TIME: 2 HOURS**
***Instructions to Candidates***
This paper consists of FIVE questions
Answer question ONE (COMPULSORY) and any other TWO questions.
***This paper consists of two printed pages.***
***Mobile phones are NOT allowed in the examination room***

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**QUESTION ONE. (30 MARKS)**

a) i) Define the following terms: [3mks]

a) Osmoregulation
b) Fish anatomy
c) Fish physiology

ii) State the function of the following organs: [2mks]

a) Lateral line
b) Dorsal fin

b) i) Distinguish between external and internal respiration [4mks]

ii) How do fish excrete? [1mk]

c) i) Outline two functions of the gills in fish [2mks]

ii) State two organs present in fish but absent in humans [1mk]

iii) Name two types of muscle tissues in fish [2mks]

d) Explain the functions of the following endocrine glands in fish [5mks]

i. Pituitary gland
ii. Thyroid gland
iii. Pineal gland
iv. Ultimobranchial Glands
v. Adrenal gland

e) i) Enumerate three core functions of the skeletal system in fishes [3mks]

ii) Explain the following terms: [2mks]

a) Posterior (caudal)
b) Cranial

**f)** i) Outline three ways in which fish accomplices sensory perception: [3mks]

ii) Distinguish between cranial and spinal nerves in terms of their location and function [2mks]

**QUESTION TWO. (20 MARKS)**

Describe any four fish body forms highlighting the importance for each form.

**QUESTION THREE. (20 MARKS)**

Describe the process of food digestion in fish from the time it enters the mouth until when part of it is eliminated as waste product.

**QUESTION FOUR. (20 MARKS)**

Describe the structure and function of the following internal organs of fish

a) The heart [10mks]

b) The kidneys [10mks]

**QUESTION FIVE. (20 MARKS)**

Describe the importance of any five external anatomical features in estuarine fishes