FACULTY	**SCIENCE**
DEPARTMENT	**ZOOLOGY**
MODULE	**ZOO 2B20 & ZOO22B2: Vertebrate Anatomy, Function & Evolution**
CAMPUS	**APK**
SEMESTER	**Second**
EXAM	**SUPPLIMENTARY EXAM**

DATE: January 2020	**SESSION:**
ASSESSOR	**PROF. J.F. DURAND**
INTERNAL MODERATOR	**DR. L. NEETHLING**
EXTERNAL MODERATOR	**N/A**
DURATION: 2 HOURS	**MARKS: 100**

NUMBER OF PAGES INCLUDING THIS ONE: 2

INSTRUCTIONS: Answer ALL the questions

Question 1.
Compare the strong points of Linnaean Classification and Cladistics in table form.
(8)

Question 2.
List the organs that develop from the general endoderm. Please indicate the structures found in the neurula stage as well. (15)

Question 3.
The ammoecoete larva of the lamprey was originally classified as a cephalochordate. Describe why this confusion occurred by comparing the morphology of Amphioxus with that of the ammocoete larva by means of labelled illustrations. Underline the homologous characteristics shared between the two organisms.
(16)

Question 4.
Draw a labelled diagrammatic sketch of the splanchnocranium of the shark and show the position and composition of the branchial arches.
(8)

Question 5.
Make labelled illustrations of cross sections of the digestive system showing the detailed morphology of the large and small intestine. (10)

Question 6.
Discuss the origin of the double circulatory system as can be seen in the lungfish. Draw labelled diagrammatic illustrations of the heart, aortic arches, gills and pulmonary system of the African lungfish.
(10)

Question 7.
Mammals are often described by means of soft tissue structures. Mammals originated approximately 200 million years ago but these soft tissues are not preserved in the fossils of mammals. What skeletal characteristics could one use to identify these fossils as being those of mammals?
(15)

Question 8.
Make a diagrammatic illustration of the mammal skull in side view, name all the elements and colour (or list) the elements according to their origins. (18)

Total 100