



## **FACULTY OF SCIENCE**

### **DEPARTMENT OF ZOOLOGY**

**MODULE        ZOO2B20**

**CAMPUS        APK**

**EXAM            NOVEMBER 2014**

**DATE:            10/11/2014**

**SESSION        08:30**

**ASSESSOR(S)**

**DR J.F. DURAND**

**INTERNAL MODERATOR**

**PROF B. VAN VUUREN**

**DURATION      120 MIN**

**MARKS    100**

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**NUMBER OF PAGES: 2 PAGES**

**INSTRUCTIONS:        Answer all the questions.**

### **QUESTION 1**

Describe the difference between the concepts of punctuated equilibrium and phyletic gradualism.

[2]

### **QUESTION 2**

Describe the development of the embryo of *Amphioxus* from the fertilized ovum to the gastrula by means of labelled illustrations. Indicate the different prospective organ regions with colouring pencils or by cross-hatching and stippling.

[20]

### **QUESTION 3**

Indicate the relationships of the Chordata by means of a cladogram

[23]

### **QUESTION 4**

Explain why the ammocoete larva of the lamprey was originally classified as a cephalochordate.

[5]

### **QUESTION 5**

*Archaeopteryx* is often described as a link between the dinosaurs and the birds. Compare the morphological characteristics of *Archaeopteryx* with that of a modern bird in table form, listing the shared and unique characteristics of each group.

[20]

### **QUESTION 6**

Describe the origin of the mammalian ear ossicles and the transformation of the feeding apparatus in the carnivorous synapsids ancestral to the mammals.

[15]

### **QUESTION 7**

List the cranial nerves of a shark (numbers and names) and the structures innervated by these nerves in table form.

[15]

**TOTAL MARKS (100)**

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