

**UNIVERSITY EXAMINATIONS**

**FIRST SEMESTER 2025/2026 ACADEMIC YEAR**

**THIRD YEAR EXAMINATION FOR THE DEGREES OF  
BACHELOR OF EDUCATION (SCIENCE), BACHELOR OF  
SCIENCE (GENERAL)**

**ZOOL 313: ANIMAL SYSTEMATICS AND EVOLUTION**

***STREAM: R***

***TIME: 2 HRS***

***DAY: FRIDAY [2.30 – 4.30 P.M]***

***DATE: 06/02/2026***

**THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**

**Instructions**

**Attempt all questions in Section A and ANY two in Section B**

**SECTION A (40 MARKS)****QUESTION ONE**

Give the correct biological term for each of the following descriptions **(5 Marks)**

- i. New species can appear quickly, over a relatively short period of time.
- ii. Mechanisms that prevent different species from reproducing with each other
- iii. The study of fossils which provides evidence for evolution
- iv. Sudden change to the genetic composition of an organism
- v. Branched diagram showing evolutionary relationships among organisms

**QUESTION TWO**

Outline the contributions of the following **(4 Marks)**

- a) Archbishop Ussher of Armagh (1581-1656)
- b) Aristotle (384-322 BC)
- c) Carl Linnaeus (1707-1778)
- d) Louis Pasteur (1822 - 1895)

**QUESTION THREE**

- a) Distinguish between divergent and convergent evolution **(4 Marks)**
- b) Briefly explain the condition that influence the distribution of animals **(3 Marks)**

**QUESTION FOUR**

- a) Outline the factors that contribute to genetic variation **(3 Marks)**
- b) Distinguish between polyphyletic and monophyletic classification **(2 Marks)**

**QUESTION FIVE**

Write a brief account showing how Lamarck would have explained the development of longer necks in modern giraffes. **(4 Marks)**

**QUESTION SIX**

Explain the loopholes found when using the following theories to explain the origin of life

- a) Special creation by a supernatural being **(1 Mark)**
- b) Cosmozoan **(2 Marks)**
- c) Spontaneous generation **(2 Marks)**

**QUESTION SEVEN**

- a) Give a brief account on the contribution of Ancient Egyptians in the discovery of time (2 Marks)
- b) Outline the radiometric techniques used in geologic dating (3 Marks)

**QUESTION EIGHT**

Explain the origin of life through biochemical/RNA theory

(5 Marks)

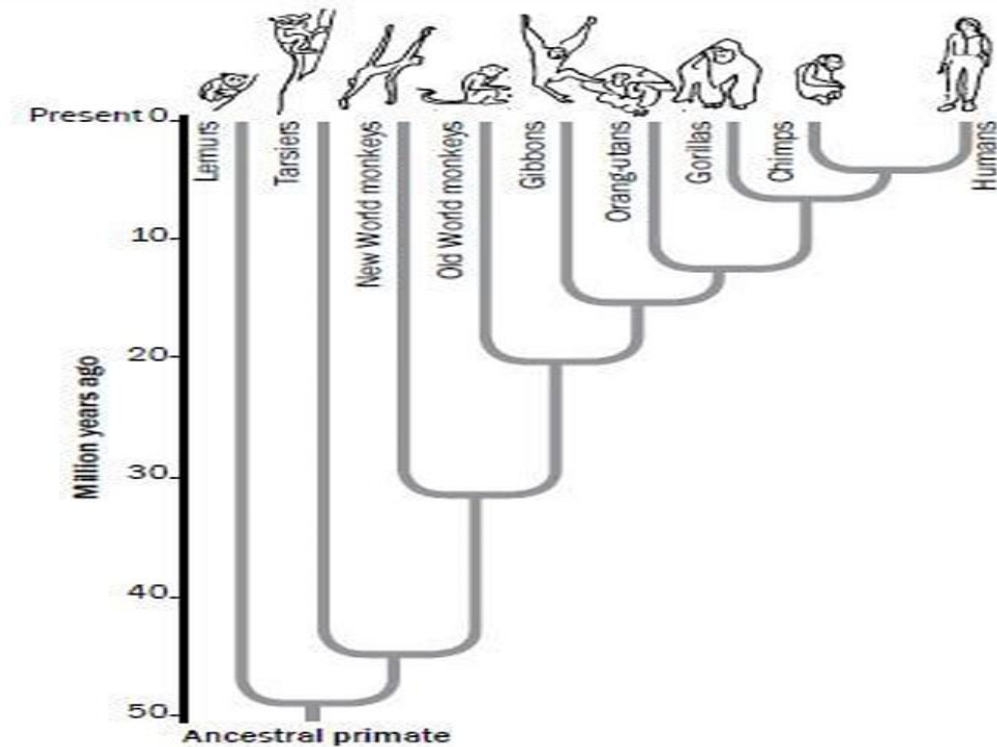
***SECTION B: ANSWER ANY TWO QUESTIONS (30 marks)***

**QUESTIONS NINE**

- a) Describe the importance of the study of fossils in human evolution
- b) Discuss the following forms in human evolution
  - i. Homo erectus stage
  - ii. Homo habilis
- c) Discuss the culture and stone tools of Neanderthal man

**QUESTION TEN**

Study the phylogenetic tree below and respond to the following



- a) State the time when the ancestral primate live on earth **(2 Marks)**
- b) Name the organism that shares the most distant common ancestor with humans **(1 Mark)**
- c) Identify the organism that is most closely related to humans. **(1 Mark)**
- d) State the time when the New World monkeys split from the common ancestor that gave rise to the Old World monkey **(2 Marks)**
- e) Determine the period of existence of common ancestor that evolved into the gibbons exist **(3 Marks)**
- f) Outline common characteristics shared by humans and gorillas and the other primates **(3 Marks)**
- g) Explain why 'genetic drift is an evolutionary agent **(5 Marks)**

**QUESTION ELEVEN**

- a) Describe the process of natural selection **(5 Marks)**
- b) Discuss the scientific evidences which support the theory of natural selection as argued by Charles Darwin **(10 Marks)**