

ZOO 411E



OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2020 /2021 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

COURSE CODE: ZOO 411E

COURSE TITLE: EVOLUTIONARY BIOLOGY

DATE: 19TH JULY, 2021

TIME: 08.00 AM – 11.00 AM

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER

ZOO 411E

REGULAR – MAIN EXAM

ZOO 411E: EVOLUTIONARY BIOLOGY

STREAM: BED (SCIENCE)

DURATION: 3 Hours

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INSTRUCTIONS TO CANDIDATES

- i. Answer ALL questions from section A and any THREE from section B.*
 - ii. Diagrams should be used whenever they serve to illustrate the answer.*
 - iii. Do not write on the question paper.*
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SECTION A (24 MARKS)

Question One

- a) Explain the limitations of the creation theory of the origin of life (3 Marks)
- b) Give an account of the characteristics of the primitive earth as explained in the origin of life (3 Marks)
- c) Define the following terms (3 Marks)
 - i. Genetic drift
 - ii. Mutation
 - iii. Microevolution
- d) Using relevant examples, differentiate between adaptive radiation and speciation (3 Marks)

Question Two

- a) Describe briefly the theory of punctuated equilibrium. (3 Marks)
- b) Give a brief account of co-evolution (3 Marks)
- c) Outline four conditions necessary for natural selection. (4 Marks)
- d) Give two evidences against the mutation theory of Hugo de Vries (3 Marks)

SECTION B (36 MARKS)

Question Three

- a) Describe the proposed steps in the chemical theory of the origin of life (10 Marks)
- b) Give two facts that Darwinism was not able to explain (2 Marks)

Question Four

- a) Using an example, give an account of Lamarck's theory of evolution (10 Marks)
- b) Outline the significance of Lamarckism (2 Marks)

Question Five

- a) Explain how isolation mechanism brings about speciation (8 Marks)
- b) Highlight the difference between convergent and divergent evolution (4 Marks)

Question Six

- a) Outline the events that take place during microevolution and macroevolution. (10 Marks)
- b) Highlight the basic characteristics of the primate order. (2 Marks)

Question Seven

- a) Discuss the synthetic theory of evolution. (10 Marks)
- b) Describe the effect of genetic drift on gene frequencies (2 Marks)
