(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2022/2023 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY AND EDUCATION SCIENCE

COURSE CODE: SBL 428

COURSE TITLE: EVOLUTIONARY BIOLOGY

DATE: *Wednesday 31st August, 2022.* **TIME:** *9:00 – 11:00 A.M.*

INSTRUCTIONS TO CANDIDATES

Answer Question one (1) and any other two (2) Questions. Question one carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over

Question One

a. Define the following terms:

i. Founder's effect (2 marks)
ii. Evolution (2 marks)
iii. Species (2 marks)
iv. Extinct population (2 marks)
v. Extant population (2 marks)
vi. Convergent evolution (2 marks)
vii. Divergent evolution (2 marks)

b. Evolution is a vital concept in biology. Discuss. (4 marks)
c. State the Hardy Weinberg equilibrium. (4 marks)
d. List the molecules of evolution (3 marks)
e. Using an example, define the most recent common ancestor (MRCA) (2 marks)

Question Two

a. What could account for population extinction? (10 marks)
b. Paleontology and archaeology are not necessarily definitive in evolutionary studies. Discuss using relevant examples. (10 marks)

Question Three

Discuss the evidence of evolution. (20 marks)

Question Four

a. Differentiate between natural selection and artificial selection (4 marks)
b. Discuss the various forms of selection (16 marks)

Question Five

Discuss speciation highlighting the processes involved therein. (20 marks)