



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (BIOLOGICAL SCIENCES)
1ST YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR
MAIN CAMPUS - REGULAR

COURSE CODE: SBI 3113

COURSE TITLE: INTRODUCTION TO GENETICS AND EVOLUTION

EXAM VENUE: LAB 3

STREAM: (BIO)

DATE: 21/04/16

EXAM SESSION: 9.00 – 11.00 AM

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in Section A and Any two questions in Section B**
 - 2. Candidates are advised not to write on question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Distinguish between genotype and phenotype attributes on an organism, and relate the effect of environment on them. (3 marks)
2. What is “modern synthesis” as used in evolution (3 marks)
3. Explain how fossils are dated. (3 marks)
4. Define the following terms. (3 marks)
 - a. Heredity
 - b. Fidelity
 - c. mutability

5. Explain how isolation can lead to evolution. (3 marks)
6. Name any three earlier scientist and briefly state their roles in relation to the current understanding of evolution. (3 marks)
7. Differentiate creationism and evolution as pillars explaining the origin of life. (3 marks)
8. State and briefly explain the sources of genetic variation in an organism. (3 marks)
9. Relate Altruism to adaptation and how it disadvantages the survival of an organism. (3 marks)
10. What is hybridization? Briefly explain how it contributes to the emergence of a new species. (3 marks)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

11. State and explain five pieces of evidences which have been used to convince the current body of scientist on the occurrence of evolution. (20 marks)
12. Discuss five misconceptions about evolution. (20 marks)
13. Describe the logical reasoning behind Darwin’s concept of natural selection. (20 marks)
14. Describe the major ideas on evolution and related topics that had a significant influence on Charles Darwin as he developed the concept of evolution by natural selection. (20 marks)