



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

**2018/2019 ACADEMIC YEAR
FOURTH YEAR SECOND SEMESTER**

**SCHOOL OF SCIENCE
BACHELOR OF SCIENCE**

**COURSE CODE: BOT 414
COURSE TITLE: EVOLUTIONARY
MECHANISMS**

**DATE: 26TH APRIL, 2019
1030HRS**

TIME: 0830 -

INSTRUCTIONS TO CANDIDATES

- (a) **Answer ALL the Questions in Section A**
(b) **Answer ANY TWO Questions in Section B**

This paper consists of 2 printed pages. Please turn over.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Briefly describe any three types of point mutations.
(3marks)
2. Explain the basic reasons for support of evolution as a corner stone of modern biology.
(3marks)
3. Describe any three modes of gradual speciation.
(3marks)
4. State the three methods of origin of new characters by introgressive hybridization.
(3marks)
5. Explain the role of phenotypic plasticity in modification of phenotypes
(3marks)
6. Briefly explain the concept behind the germ plasm theory of evolution
(3marks)
7. Using specific examples, describe sibling species.
(3marks)
8. Briefly explain the three kinds of chromosomal losses (aneuploidy). (3marks)
9. Briefly outline any three ways that variability is maintained in populations.
(3marks)
10. Explain any three conditions necessary for hybridization to be important in evolution.
(3marks)

SECTION B: Answer Any TWO questions (2X20=40 marks)

11. a) Distinguish between transient and persistent genetic polymorphisms
(6marks)
b) Discuss the natural selective pressures in a population.
(14marks)
12. Discuss the various forms of evidences of evolution.
(20marks)
13. a) Explain the tenets of the Modern Synthetic Theory of organic evolution.

(10marks)

b) Describe the various kinds of chromosomal duplications

(10marks)

14. a) Explain the phenomenon of introgression and its role in hybridization.

(8marks)

b) Describe the post-zygotic isolating mechanisms in a sympatric species.

(12marks)

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