



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

TIME: 0830 – 1030HRS

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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