



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2018/2019 ACADEMIC YEAR FOURTH YEAR SECOND SEMESTER

SCHOOL OF SCIENCE BACHELOR OF SCIENCE

**COURSE CODE: BOT 412
COURSE TITLE: BIOSYSTEMATICS**

DATE: 17TH APRIL, 2019

TIME: 1100 – 1300HRS

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. Describe the separation methods in floral organs in plants with self incompatibility system (SI). **(3marks)**
2. Describe a circinotropous ovule. **(3marks)**
3. Explain any three kinds of point mutations. **(3marks)**
4. Distinguish between the two forms of agamospermy. **(2marks)**
5. Distinguish between;
 - a) Clade and cladogram. **(2marks)**
 - b) Apomorphy and autapomorphy. **(2marks)**
6. State any three advantages of amphimixis. **(3marks)**
7. Distinguish between pericentric and paracentric chromosomal inversions. **(3marks)**
8. Describe any three shapes of pollen apertures. **(3marks)**
9. Outline the types of self incompatibility (SI) in andiosperms. **(3marks)**
10. Describe integuments of ovules in plants. **(3marks)**

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

11. Explain the various reproductive isolating mechanisms among species. **(20marks)**
12. a) Explain the species concepts in biology. **(8marks)**
b) Describe the phenetic system of classification. **(12marks)**
13. a) Explain any six features of pollen morphology that are useful in the study of plant diversity. **(12marks)**
b) Discuss the pollination syndromes under entomophily. **(8marks)**
14. a) Describe the various mechanisms that maintain genetic variability in flowering plants. **(10marks)**
b) Discuss the process of megagametogenesis in flowering plants. **(10marks)**

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