MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER EXAMINATIONS

FOR
BACHELOR OF SCIENCE (BOTANY) AND
BACHELOR OF SCIENCE (ZOOLOGY)

COURSE CODE: BOT 4114

COURSE TITLE: BIOLOGICAL MODELLING

DATE: 9TH DECEMBER 2019 **TIME: 1100-1300HRS**

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in Section A and any other **TWO** questions in Section B.

Answer ALL questions in section A

1. Define the following terminologies as used in biological modeling: **(3marks)**
   a. Conception model
   b. Non linear
   c. Envisionment
2. Distinguish between reverse modeling and forward modeling **(3marks)**
3. Explain three principles of qualitative modelling **(3marks)**
4. Outline the process involved in model induction **(3marks)**
5. Explain two issues of qualitative representation **(3marks)**
6. State the potential limitation of simulation **(3marks)**
7. Outline the general steps of model evaluation **(3marks)**
8. Describe the caveat of using ordinary differential equations (3marks)
9. Briefly explain the advantages of using yeast 2 hybrid model **(3mark)**
10. Name three types of stochastic model **(3mark)**

SECTION B: ANSWER ANY OTHER **TWO** QUESTIONS **(40 MARKS)**

11. Discuss various types of modeling tools **(20 marks)**
12. Explain the applications of quantitative modeling **(20marks)**
13. Discuss merits and demerits of qualitative modeling **(20marks)**
14. Explain the significance of ecosystem network analysis **(20marks)**

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