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OFFICE OF THE DEPUTY PRINCIPAL

ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2018 /2019 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER REGULAR EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION (SCIENCE)

COURSE CODE: **BOT 203E**

COURSE TITLE: **GENERAL GENETICS AND EVOLUTION**

DATE: 16TH APRIL, 2019   **TIME: 2.00 PM – 5.00 PM**

INSTRUCTIONS TO CANDIDATES

- **SEE INSIDE**

THIS PAPER CONSISTS OF 3 PRINTED PAGES   **PLEASE TURN OVER**

BOT 203E: GENERAL GENETICS AND EVOLUTION

STREAM: BED (SCIENCE)   **DURATION: 3 Hours**

INSTRUCTIONS TO CANDIDATES

i.   *Answer **ALL** questions from section A and any **THREE** from section B.*

ii.   *Diagrams should be used whenever they serve to illustrate the answer.*

iii.   *Do not write on the question paper.*

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SECTION A (24 MARKS)

Question One

   a) Highlight Gregor Mendel's life and work   (5 Marks)

   b) Define the following terms

      i)   Allele   (2 Marks)

      ii) Lethal allele   (2 Marks)

   c) Distinguish between epigenesis and pangenesis   (4 Marks)

Question Two

   a) Describe the nucleotide and mention the difference to the nucleoside   (5 Marks)

   b) State and explain any two genetic scenarios that go against Mendel's law of inheritance

                                                                            (4 Marks)

   c) Outline the Hardy-Weinberg principle   (3 Marks)

SECTION B (36 MARKS)

Question Three

Using a Punnet square, Calculate the probability of getting a progeny with the following

genotype combination (YyBb) of a seed colour and seed texture respectively from crossing

parents with the following genotypes. YyBb   (12 Marks)

Question Four

   a) Describe any five chromosome abnormalities   (5 Marks)

   b) Identify any five sex limited characteristics observed in animals   (5 Marks)

   c) Briefly describe Artificial Selection   (2 Marks)

Question Five

Give an account of isolation mechanisms that lead to speciation   (12 Marks)

Question Six

   a) Discuss any five types of mutation   (10 Marks)

   b) List two hazards of mutation   (2 Marks)

Question Seven

Outline the essential features of Darwin's theory   (12 Marks)

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