UNIVERSITY OF SWAZILAND

1st SEM. 2017/2018

RE-SIT EXAMINATION PAPER


PROGRAMMES:    BSc ANIMAL SCIENCE

BSc ANIMAL SCIENCE (DAIRY OPTION)

BSc AGRONOMY

BSc HORTICULTURE

BSc AGRICULTURAL EDUCATION


COURSE CODE:    ASC 205

TITLE OF PAPER:    PRINCIPLES OF GENETICS

TIME ALLOWED:    TWO (2) HOURS

INSTRUCTIONS:   ANSWER FOUR (4) QUESTIONS


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THE CHIEF INVIGILATOR

**Question 1**

(a) What is regarded as the genetic material in living organisms and why?

(10 Marks)

(b) DNA ⟹ mRNA ⟹ Protein

Discuss the processes represented by the arrows

(15 Marks)

**Question 2**

(a) Is it true or false that chromosome is DNA?　　　(5 Marks)

(b) Give valid points to support the answer given in (a) above.

(20 Marks)

**Question 3**

A. Define the following terminologies:

(i) Traits
(ii) Gene
(iii) Alleles
(iv) Dominant allele
(v) Recessive allele

(5 Marks)

B. Write on the inheritance of any four (4) from the list above

(20 Marks)

**Question4**

(a) Define chromosomal infaction.

(5 Marks)

(b) Using five (5) examples, discuss the effect of chromosomal infaction on inherited sex-linked chromosomes

(20 Marks)

**Question 5**

(a) State the three (3) steps involved in using a Punette Square to determine crosses and ratios

(9 Marks)

(b) If a man who is a carrier of the haemophilia recessive trait Ff marries a woman that is normal Ff, with Punette Square, describe the ratio of inheritance of the disease, if the disease is only expressed in ff individual(s).

(10 Marks)

(c) If they have four (4) children, what ratio of these children will be carriers? What ratio will be effected?

(6 Marks)