



**MERU UNIVERSITY COLLEGE
OF SCIENCE & TECHNOLOGY**

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University Examinations 2011/2012

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR DIPLOMA IN
AGRICULTURE

BIO 0211: MICROBIOLOGY AND ZOOLOGY

DATE: DECEMBER 2011

TIME: 1½ HOURS

INSTRUCTIONS: Answer question *one*, *one* in section B and *one* in section C

QUESTION ONE – (30 MARKS)

- (a) Giving examples, name the two forms of life. (2 Marks)
- (b) List three differences between prokaryotes and eukaryotes. (3 Marks)
- (c) What is taxonomy? (1 Mark)
- (d) What is the difference between diploblastic and triploblastic body plan? (2 Marks)
- (e) With the aid of a diagram, show the four specialized cell types present in sponges. (4 Marks)
- (f) Name two invertebrate major phyla. (2 Marks)
- (g) Give two differences between the vertebrates and invertebrates. (2 Marks)
- (h) How is the thorax in insects specialized for locomotion? (2 Marks)
- (i) List any two genes found on lac operon. (2 Marks)
- (j) Viruses are said to be on verge of life. Are they living? (2 Marks)
- (k) Draw a well labeled diagram to show the generalized structure of a virus. (4 Marks)
- (l) Some bacteriophages have a lifecycle without a break and it's called.....
Whereas others have a prolonged cycle with a dormant stage. This is called.....
cycle. (-- Marks)
- (m) What are retroviruses? Give an example. (2 Marks)

SECTION B

QUESTION TWO – (15 MARKS)

With the aid of a diagram, describe the steps involved in the life cycle of a retrovirus. (15 Marks)

QUESTION THREE – (15 MARKS)

Describe the processes of nitrogen cycle. (15 Marks)

SECTION C

QUESTION FOUR – (15 MARKS)

- (a) List and describe briefly five forms of behaviours exhibited by animals. (-- Marks)
- (b) With the aid of a diagram show the difference between coelomate and acoelomate condition. (-- Marks)

QUESTION FIVE – (15 MARKS)

- (a) Name the three types of primary germ layers. (3 Marks)
- (b) Give a tissue or organ derived from each of the primary germ layers. (3 Marks)
- (c) Define the term coelom (2 Marks)
- (d) In mollusks and arthropods, the coelom is reduced and replaced by a principal body cavity called..... (1 Mark)
- (e) Describe the three characteristics that distinguishes the phylum chordate. (6 Marks)