



EMBU UNIVERSITY COLLEGE

(A Constituent College of the University of Nairobi)

2015/2016 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (AGRICULTURE), BACHELOR OF SCIENCE (AGRIBUSINESS MANAGEMENT), BACHELOR OF SCIENCE (RANGE MANAGEMENT), BACHELOR OF SCIENCE (MANAGEMENT OF AGRO-ECOSYSTEMS AND ENVIRONMENT) AND BACHELOR OF SCIENCE (HORTICULTURE).

ABC101: BIOCHEMISTRY

DATE: APRIL 14, 2016

TIME: 11:00-01:00

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE

- a) i) Differentiate between a nucleoside and a nucleotide. (1 Mark)
ii) Discuss four differences between DNA and RNA. (4 Marks)
- b) Discuss the functional and chemical classification of polysaccharides. (5 Marks)
- c) You have been provided with processed animal feed samples in the lab. Explain how you would determine the presence of monosaccharides and polysaccharides in the samples (5 Marks)
- d) You have been supplied with DNA restriction enzymes in the lab. Explain the factors you must consider for achievement of best DNA restriction digest results. (5 Marks)
- e) Discuss the properties of water that make it an important molecule in living systems (5 Marks)
- f) i) Illustrate the basic structure of an amino acid . (1 Mark)

ii) Discuss the functions of amino acids.

(4 Marks)

QUESTION TWO

Proteins play an important role in living organisms. Discuss this statement.

(20 Marks)

QUESTION THREE

Describe the glycolysis process in living organisms.

(20 Marks)

QUESTION FOUR

a) A farmer from Kangaru is using a growth chamber for pasture production. Using your knowledge on photosynthesis advice him on how he can improve production. (10 Marks)

b) Photorespiration reduces productivity in C4 plants. Explain.

(10 Marks)

QUESTION FIVE

Enzymes are catalytic proteins that have industrial and medical applications. Discuss this statement.

(20 Marks)

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