

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

**UNIVERSITY EXAMINATIONS 2017/2018**

**YEAR 3 SEMESTER 1 EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN MEDICAL MICROBIOLOGY**

**MMB 2210: INTRODUCTION TO MOLECULAR BIOLOGY**

**DATE: DECEMBER 2017 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

1a) Briefly discuss the different types of genes (6 marks)

b) Discuss the structure of DNA as defined by Watson and Click (6 marks)

c) Differentiate between transformation and transduction (6 marks)

d) Outline 6 differences between RNA and DNA (6 marks)

e) Define;

i) Nucleoside (1 mark)

ii) Mutation (1 mark)

iii) Gene (1 mark)

iv) Phenotype (1 mark)

v) Genotype (1 mark)

vi) Allele (1 mark)

2) Discuss the process of gene regulation (20 marks)

3) Discuss with specific examples extra-chromosomal DNA (20 marks)

4) Discuss the application of molecular biology in science, technology and innovation (20 marks)