

CHUKA UNIVERSITY

SECOND YEAR EXAMINATION BMET 442 : RECOMBINANT DNA TECHNOLOGY

STREAM: Y4S1 BSc. BIOCHEMISTRY

TIME: 2 HOURS

INSTRUCTIONS

- i. **Answer Question One and any other Two Questions**
- ii. **Do not write on the question paper**

Question One (30 marks)

- a) Define the following terms

DNA cloning

Restriction enzyme

Bioinformatics

Gene therapy

(4 marks)

- b) Using EcoRi as an example, Describe how restriction enzymes are named

(5 marks)

- c) Describe the various factors affecting hybridization (10 marks)

- d) Describe restriction mapping. (5 mrks)

- e) Give four examples of enzymes enzymes used in recombinant DNA technology and their applications. (6marks)

Question Two (20 marks)

- a) Explain various uses of bioinformatics. (10 marks)

- b) Give various examples of industrial applications of recombinant DNA technology (10 marks)

Question Three (20 marks)

- a. Explain various applications of the PCR. (10 marks)
- b. What is DNA sequencing? (2 marks)
- c. Elucidate the sanger method of DNA sequencing. (10 marks)

Question Four (20 marks)

- a) Explain in detail the various methods used for the production of labeled probes. (10marks)
- b) Explain various cloning vectors used in recombinant DNA. (10 Marks)