

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF

BMED 420: RECOMBINANT DNA TECHNOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 4/12/2017

2.30 P.M – 4.30 P.M

INSTRUCTIONS:

- **Answer question one and any other two questions**

1. (a) In relation to invitro techniques write briefly on
 - (i) Uses of multiplex PCR [3marks]
 - (ii) Uses and danger of ethidium bromide. [3marks]
- (b) Give a detailed account of the following;
 - (i) Briefly discuss the features that are considered when selecting a cloning vector. [5marks]
 - (ii) DNA modifying enzymes. [5marks]
- (c) Outline the factors that could interfere with restriction digestion experiment. [3marks]
- (d) Using structures, describe the hydrogen bonds between Guanine and Cytosine. [3marks]
- (e) Briefly describe the principle of separating proteins using SDS-PAGE technique. [5marks]
- (f) Discuss the industrial applications of recombinant DNA technology. [3marks]

2. A biochemistry student was provided with a plant materials and was required to isolate and purify DNA from it.
- (a) Describe one specific method that you would advise the student to use and explain the advantage of the method you have chosen. [12marks]
- (b) Briefly describe how the student can use spectrophotometric method to determine the quality and concentration of the isolate DNA. [8marks]
3. (a) Discuss the importance, procedure and the application in southern blot hybridization technique. [10marks]
- (b) Describe the primary and tertiary structure level of proteins. [10marks]
4. (a) Describe how illumina sequencing method is used in determining the DNA sequence. [15marks]
- (b) Briefly discuss the importance of DNA sequencing. [5marks]
-