THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A constituent of JKUAT)

Faculty of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF TECHNOLOGY IN INDUSTRIAL MICROBIOLOGY AND BIOTECHNOLOGY

BIMBT 09A

SBT 2447 : CELL TECHNOLOGY

SPECIAL/SUPPLEMENTARY EXAMINATION

FEBRUARY 2013 SERIES 2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions
Answer question **ONE** (compulsory) and any other **TWO** questions

Question ONE

a) Define the following terms :-

(i) Competitive inhibition **(1mark)**

(ii) Mixed inhibition **(1mark)**

(iii) Non competitive inhibition **(1mark)**

(iv) Activatore **(2marks)**

(v) Elactace enzyme **(2marks)**

(vi) Collagenase enzyme **(2marks)**

b) Describe monodonal Antibodies **(3marks)**

c) Describe stationary phase of kinetic of cell cultivation **(5marks)**

d) Describe (i) adherent cell line **(4marks)**

(ii) Suspension cell line **(4marks)**

e) Outline advantages of cell based vaccine production **(5marks)**

Question TWO

Discuss the process of vaccine production **(20marks)**

Question THREE

Discuss the process of cell culture maintenance under the following

(i) Cell density **(3marks)**

(ii) Exhaustion of medium **(3marks)**

(iii) Subculture schedule **(3marks)**

(iv) Media recommendation **(2marks)**

(v) Manipulation of cell cultures **(5marks)**

(vi) Sub culturing **(3marks)**

(vii) Media changes **(1mark)**

Question FOUR

Discuss enzymes in cell isolation process under the following

(i) Definition **(2marks)**

(ii) Characteristics **(6marks)**

(iii) Factors affecting enzymatic activities **(6marks)**

(iv) Enzymes used in isolation process **(6marks)**

Question FIVE

a) Discuss the following aspects of DNA vaccine

(i) Definition **(2marks)**

(ii) Vaccine genetic element **(5marks)**

(iii) Microbial host **(1mark)**

(iv) Vector design **(2marks)**

(v) Vaccine insert design **(2marks)**

(vi) Application **(2marks)**

b) Describe subunit vaccines **(6marks)**