



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BTMB

ABT 4206 : BIOCHEMICAL TECHNIQUES AND INSTRUMENTATION I

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: Pick Date Dec 2016

Instructions to Candidates

You should have the following for this examination

Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

a) Describe the following terms as used in chromatographic instrumentation

i) Resolution (R_s) (3 marks)

ii) Efficiency (N) (3 marks)

b) Briefly describe monochromators and their role in spectrophotometer. (4 marks)

c). List four types lamps used in photometers (4 marks)

b. Differentiate between the following

i. Ascending and descending paper chromatography (4 marks)

ii. Isoelectric point and Isoelectric focusing (4 marks)

iii) salting in and salting out in protein precipitation (4 marks)

e) i) Define the term R_f (2 marks)

ii) List four factors that affect R_f values (2 marks)

Question TWO

Explain:

- a.) the theory of ion exchange chromatography using illustrations, (10 marks)
- b) irreversible protein precipitation methods (10 marks)

Question THREE

Describe the:

- a) use of gel filtration in molecular weight estimation (10 marks)
- b) role of ampholytes in isoelectric focusing (10 marks)

Question FOUR

Describe:

- a) general DNA gel stains (10 marks)
- b) the UV- VIS-absorption detectors (10 marks)

Question FIVE

Explain five factors affecting affinity chromatographic separation (20 marks)