



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF JKUAT)

(A Centre of Excellence)

Faculty of Applied and Health Sciences

DEPARTMENT OF **PURE AND APPLIED SCIENCES**

DIPLOMA IN SCIENCE LABORATORY TECHNOLOGY
(DSL T 12J)

ABT 2216: BIOMEDICAL TECHNIQUES CELL BIOLOGY/ HISTOLOGICAL TECHNIQUES

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: February 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this paper

- *Answer booklet*

This paper consists of **FIVE** questions.

Answer Question **ONE (compulsory)** and any other **TWO** questions

This paper consists of 2 PRINTED pages

Question ONE

- a) List THREE types of muscle cells. **(3marks)**
- b) Classify exocrine glands according to their function. **(4marks)**
- c) Differentiate between direct active transport and indirect active transport. **(3marks)**
- d) Explain how the following factors affect fixation
 - (i) Buffering **(2marks)**
 - (ii) Volume of fixative **(2marks)**
- e) State conditions which require frozen sections to be performed **(4marks)**
- f) State the diseases caused by inherited mutation the following.
 - (i) Chloride ion- channel **(1mark)**
 - (ii) Potassium ion-channel **(2marks)**
 - (iii) Sodium ion channel **(1mark)**
- g) Explain the homeostasis control of low temperature in the body. **(4marks)**

Question TWO

- a) Explain the regulation of blood sugar in the blood. **(8marks)**
- b) Describe the replication of deoxyribonucleic acid **(7marks)**

Question THREE

- a) Explain the structure of the following connective tissues
 - i) Loose (areolar) tissue **(8marks)**
 - ii) Adipose tissue **(7marks)**

Question FOUR

- a) Explain the paraffin max technique dehydration process. **(8marks)**
- b) Describe the mechanism action of aldehydes fixatives. **(7marks)**

Question FIVE

- a) Explain the staining procedure for hematoxylin and eosin. **(8marks)**
- b) Explain the procedure for mounting slides with Histo-clear mounting. **(7marks)**