



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FIRST YEAR SECOND SEMESTER EXAMINATION FOR DEGREE IN
BACHELOR OF SCIENCE IN BIOLOGY

SZL 103: INTRODUCTION TO HISTOLOGY

DATE: 2/6/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer all questions in section A and any two questions in section B.

Illustrate your answer with clean, well labelled diagrams as appropriate.

SECTION A: QUESTION ONE (30 MARKS) COMPULSORY

1.
 - a) Explain any three items indicated on the label of a prepared permanent microscope slide (3 marks)
 - b) Explain the function significance of the number of mitochondria present in an animal cell. (3 marks)
 - c) Illustrate the structure of a neurone (3 marks)
 - d) Explain the main functions of the cell nucleus (3 marks)
 - e) Explain three safety precautions to observe when using a binocular light microscope (3 marks)
 - f) Outline the differences between a cardiac and a skeletal muscle (3 marks)
 - g) Explain differential staining with regard to preparing slides for microscopic examination. (3 marks)

- h) Outline the procedure of preparing a thin blood smear for microscopic examination. (3 marks)
- i) Explain the use of any three named commonly used laboratory stains (3 marks)
- j) Trace the path of light taken by a binocular compound microscope in use(3 marks)

SECTION B – ANSWER ANY TWO QUESTIONS

- 2. a) Explain any three contemporary histological techniques (10 marks)
- b) Describe and explain the various tissues found in a mammalian testis. (10 marks)
- 3. Describe the procedure of preparing a stained permanent microscope slide of a skeletal muscle. (20 marks)
- 4. a) Illustrate the fine structure of an animal cell (10 marks)
- b) Explain the practical applications of histological studies (10 marks)
- 5. Relate Structure to function of the epithelial tissue (20 marks)