



# Technical University of Mombasa

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 2454 : BIO-ILLUSTRATION**

SPECIAL/SUPPLEMENTARY EXAMINATION

MARCH 2014 SERIES

2 HOURS

Instructions to candidates:

This paper consists of **FIVE** questions

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

**Question ONE**

a) Define the following terms:-

- |                         |         |
|-------------------------|---------|
| (i) Bio-illustration    | (1mark) |
| (ii) Micrography        | (1mark) |
| (iii) Photo-micrography | (1mark) |
| (iv) Solargraphy        | (1mark) |

b) Differentiate between :-

- |  |          |
|--|----------|
| (i) Still camera and digital camera        | (2marks) |
| (ii) Monochrome and Autochrome photography | (2marks) |

- c) Explain the following terms as used in photography
- (i) Focal length (1mark)
  - (ii) Exposure (1mark)
  - (iii) Focus (1mark)
  - (iv) Film speed (1mark)
- d) Outline the functions of the following parts of a camera.
- (i) Shutter button (1mark)
  - (ii) Optical view finder (1mark)
  - (iii) Zoom control (1mark)
  - (iv) Flasher unit (1mark)
- e) The amount of light getting into the camera is critical photography. Explain how light entry can be controlled. (4marks)
- f) (i) Outline the categories of camera lenses (2 ½ marks)
- (ii) Explain the relationship between shutter speed and lens aperture (2 ½ marks)
- g) Outline the types of photomicrographs (3marks)
- h) Explain the role of lighting in photography (2marks)

### Question TWO

- a) Outline the components of a basic single lens Reflex (SLR) camera and their functions . (15marks)
- b) Explain the differences between analog and digital camera (5marks)

### Question THREE

- a) Discuss the composition and functions of the following components of a regular black and white photographic film
- (i) The base (2marks)
  - (ii) The emulsion (2marks)
  - (iii) The anti-halation backing (2marks)
  - (iv) The overcoating (2marks)

(v) The non-curl coating **(2marks)**

b) Discuss the environmental and safety in chemical processing of protographic films

**(10marks)**

#### **Question FOUR**

a) Discuss the working of digital imaging **(7marks)**

b) Explain the methods of obtaining digital photos **(6marks)**

c) Outline the various ways of starting digital images. **(7marks)**

#### **Question FIVE**

Discuss the application of bioillustration in

a) Research **(7marks)**

b) Medicine **(8marks)**

c) Criminology **(5marks)**