

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya.**

**Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** [**info@must.ac.ke**](mailto:info@must.ac.ke)

**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE BIOCHEMISTRY.

**SHC 3203: LABORATORY TECHNIQUES**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Describe briefly the sources of health hazards in the laboratory (4 marks)
2. Outline
3. The routine precautions observed to minimize personal exposure to laboratory hazards (3 marks)
4. The disposal of hazardous and non-hazardous reagents in the laboratory (3 marks)
5. Describe how to trouble-shoot a pH meter (5 marks)
6. Calculate:
7. How many moles of NaOH are present in 50ml of 0.15M solution
8. The molar concentration of 10% NaCl solution
9. The percent solution of 1.5M NaCl (6 marks)
10. List five rules observed before disposing of material as waste (5 marks)
11. Outline the non-negotiable laboratory safety rules (4 marks)

**QUESTION TWO (20 MARKS)**

Discuss the principle behind DNA extraction and detection. (20 marks)

**QUESTION THREE (20 MARKS)**

Illustrate and describe the components of a pH meter. (20 marks)

**QUESTION FOUR (20 MARKS)**

Discuss the techniques used for protein determination and characterization. (20 marks)