MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year
SCHOOL OF PURE AND APPLIED SCIENCES
DEPARTMENT OF BIOLOGICAL SCIENCES
FIRST YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)
BACHELOR OF EDUCATION (SPECIAL NEEDS EDUCATION)
BACHELOR OF SCIENCE (PUBLIC HEALTH)
BACHELOR OF EDUCATION (SCIENCE)
BACHELOR OF SCIENCE (BIOLOGY)
SZL105/6: LABORATORY METHODS AND TECHNIQUES IN ZOOLOGY

DATE: 31/1/2022   **TIME: 2.00-4.00 PM**

INSTRUCTIONS

Answer Question1 and any other two question

Illustrate your answer with clean labelled diagrams wherever appropriate

QUESTION ONE (30 MARKS) (COMPULSORY)

a)   Outline the safety features of a biology laboratory   (3 marks)

b)   Explain the PPEs for use when handling liquid nitrogen.   (3 marks)

c)   Explain why a chemical hood is not a storage cabinet   (3 marks)

d)   Explain how corrosive laboratory chemicals may be stored in a chemistry lab (3 marks)

e)   Describe any three uses of preserved museum specimens   (3 marks)

f)   Define the composition of the team that designs modern laboratories   (3 marks)

g)   Explain at which levels laboratory materials are requisitioned   (3 marks)

h)   Explain how toxins can get into a biology laboratory worker   (3 marks)

i)   Explain the primary purpose of an MSDS   (3 marks)

j)   Explain the basic principles of the supply of chemicals to a laboratory   (3 marks)

QUESTION TWO (20 MARKS)

a)   Discuss a procedure that you would use to calibrate a clinical thermometer   (10 marks)

b)   Discuss how you would handle a mercury thermometer that has broken while undertaking an experiment in a laboratory.   (10 marks)

QUESTION THREE (20 MARKS)

You have collected some fresh insect specimens in Kitui County. Discuss how they would end up professionally preserved in the biology laboratory at Machakos University

QUESTION FOUR (20 MARKS)

Discuss the hazards a laboratory worker is exposed to and their possible mitigation

QUESTION FIVE (20 MARKS)

Discuss factors to consider when designing a biological laboratory