

# UGANDA MARTYRS UNIVERSITY

## FACULTY OF SCIENCE

### DEPARTMENT OF NATURAL SCIENCES

COC 2201: Research Methodology and Data analysis

Group: (Economics/Mathematics/Statistics)- BSC  
(GEN)

YEAR 1 SEMESTER I EXAMINATIONS 2022/2023

Time: 3 hours

Read the following instructions carefully:

- (i) This examination consists of SIX questions.
- (ii) Answer only FOUR questions. Only the **first four** questions answered will be marked.
- (iii) Indicate the questions answered on the examination answer booklets provided.
- (iv) All answers MUST be presented in the Answer Booklets provided.
- (v) Please, read and follow ALL the instructions on the examination answer book.

### Question 1

- (a) Design and state a good researchable topic of your choice. (05 marks)
- (b) Using the topic you have chosen, develop a statement of the problem.  
(07 marks)
- (c) State four specific objectives in your topic. (08 marks)

### Question 2

- (a) Discuss the importance of literature review in a research.
- (b) Discuss four data collection instruments and how they are used in design.  
(20 marks)

### Question 3

- (a) Explain **FIVE** reasons why hypothesis is important in research.  
(10 marks)
- (b) Discuss **TWO** types of alternative hypothesis. (05 marks)
- (c) Highlight **FIVE** characteristics of a good hypothesis. (05 marks)

### Question 4

- (a) Explain the need for editing, coding, classifying and tabulating in the processing of data. (08 marks)
- (b) Discuss various kinds of charts and diagrams used in data analysis.  
(12 marks)

### Question 5

- (a) Explain **FIVE** reasons why research is important. (05 marks)
- (b) Outline the research process. (05 marks)
- (c) Highlight **FIVE** factors to consider when selecting a research topic. (05 marks)
- (d) State **FIVE** components of an introduction section of a research report. (05 marks)

### Question 6

- (a) Distinguish the following terms as used in statistics
  - (i) Sample and Population.
  - (ii) Descriptive statistics and inferential statistics.
  - (iii) Statistics and Parameter.
  - (iv) Dependent variable and the Independent variable. (08 marks)
- (b) By citing examples in each explain the **TWO** levels of measurement scales for statistical data. (04 marks)
- (c) The number of days the college nurse was called for emergencies per month for the last 10 months were; 2, 3, 4, 0, 5, 6, 7, 4, 3, 2.  
Determine the
  - (i) Mean.
  - (ii) Mean Absolute Deviation.
  - (iii) Variance.
  - (iv) Standard deviation. (08 marks)

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