

**AGED 424: STATISTICAL AND RESEARCH METHODS IN AGRICULTURAL EDUCATION**

**RESIT/SPECIAL EXAM**

**STREAM: Y4S1**

**TIME: 2 HOURS**

**Instructions**

- Answer questions one (Compulsory) and any other three questions
- Do not write on the question paper

**Question One**

1a) Fill in the blank spaces (5 marks)

- .....is a specific, clear, and testable proposition or predictive statement about the possible outcome of a scientific research study
  - .....often make use of checklist and rating scales
  - .....describes, infers, and resolves problems using numbers
  - .....is based on words, feelings, emotions, sounds and other non-numerical and unquantifiable elements
  - .....is a smaller collection of units from a population used to determine truths about that population
- b). State five disadvantages of focus groups a method of data collection (5 marks)
- c). List five disadvantages of internet as a source of literature (5 marks)
- d). Here are the body masses (in kilograms) of 22 patients; 60 45 72 55 42 65 54 68 74 50 78 70 58 48 67 64 68 52 60 58 75 83. Construct a grouped frequency distribution using five classes (10 marks)

**Question Two**

- Distinguish between quantitative and qualitative variables (4 marks)
- State two components of a problem statement (2 marks)
- List three sources of research problems (3 marks)
- Calculate the following statistics from the data given below  
85,96,76,108,85,80,100,85,70,95
- Calculate the following;
  - 1st quartile (4 marks).
  - 3<sup>rd</sup> quartile (4 marks).
  - 10th percentile (4 marks).
  - 6th decile (4 marks).

**Question Three**

a) Calculate the mean, median, and mode of the following grouped data (13 marks)

Class	Frequency
2-4	3
4-6	4
6-8	2
8-10	1

b) Describe the six steps followed in a research process (12 marks)

#### Question four

- Describe the four scales of measurement (8 marks)
- Use Pearson's correlation to determine if there is a relationship between age and income (17 marks)

Person	Age (x)	Income (y)
1	20	1500
2	30	3000
3	40	5000
4	50	7500
<b>Total</b>	140	17000

#### Question five

- Differentiate between snowball sampling and purposive sampling (4 marks)
- Give reasons why it is important to undertake literature review in research (4 marks)
- Describe the steps followed when testing a statistical hypothesis (9 marks)
- Calculate the standard deviation of the following data set (8 marks)

Weight (lb)	Frequency
118 – 126	3
127 – 135	5
136 – 144	9
145 – 153	12
154 – 162	5
163 – 171	4
172 - 180	2