BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE
AGC225

Department of Animal Science
BSc Agricultural Science Part II Examination
Statistical Methods and Experimental Designs

2 HOURS (70 Marks)
INSTRUCTIONS TO CANDIDATES
Answer question number **1** from SECTION A, and any two from SECTION B.

SECTION A (COMPULSORY)

1.

a) Explain the concept of a research gap. **[4 marks]**

b) Discuss the significance of conducting literature review when formulating a research topic. **[6 marks]**

c) Compare and contrast a research proposal and a concept note. **[4 marks]**

d) Describe and illustrate how you can effectively engage the reader and create interest in your research topic in the introduction section of a proposal. **[6 marks]**

e) Differentiate between research objectives and research questions. **[4 marks]**

f) Discuss the characteristics of well-formulated research objectives. **[6 marks]**

SECTION B (CHOOSE ANY TWO QUESTIONS)

2.

a) Explain the concept of snowball sampling and discuss its applications in qualitative research. **[10 marks]**

b) Compare and contrast stratified random sampling and quota sampling in the context of survey research. **[10 marks]**

3.

a) Define focus group discussions. **[2 marks]**
b) Discuss their significance in agricultural research. **[6 marks]**
c) Identify the key steps involved in conducting a successful focus group discussion. **[6 marks]**
d) Highlight the strengths and weaknesses of using focus group discussions as a data collection method. **[6 marks]**

4.

a) Define the concept of research ethics. **[4 marks]**
b) Explain why ethical principles are important in research. **[16 marks]**

5. A researcher conducted an experiment to compare the yield of three different varieties of sunflower using CRD. The data collected are as follows:

Variety 1: 4.5, 4.8, 5.0, 4.7, 4.9
Variety 2: 4.2, 4.0, 4.4, 4.3, 4.1
Variety 3: 3.8, 3.6, 3.5, 3.7, 3.9

Perform analysis of variance (ANOVA) for this experiment and interpret the results. **[20 marks]**

END OF PAPER