BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

MFS 511

Department of Agricultural Economics, Education and Extension
MSc in Food Security and Sustainable Agriculture Part I Examination
Applied Research Methods

3 HOURS (100 Marks)
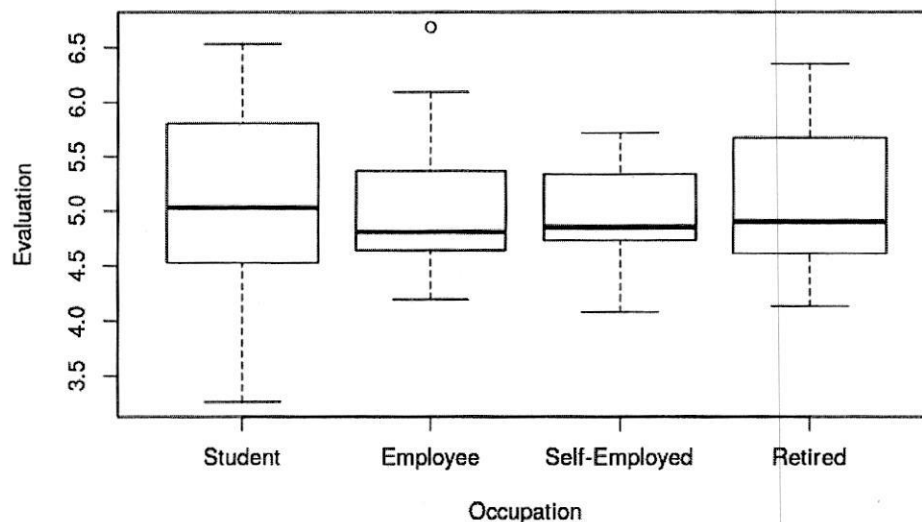
5 - DEC 2021

INSTRUCTIONS TO CANDIDATE
Answer question ONE from SECTION A and any TWO questions from SECTION B.

SECTION A (COMPULSORY)

1) The World Food Programme have tasked you to investigate the Post-Cyclone Idai malnutrition of children in Chimanimani.

   a) Formulate a brief background to the study. (less than a page)   **[6 marks]**

   b) Formulate the problem statement for this study. (less than a page)   **[7 marks]**

   c) State three research questions for the study.   **[3 marks]**

   d) Formulate the main objective and 2 specific research objectives.   **[6 marks]**

   e) State one possible research hypotheses for the study.   **[2 marks]**

   f) State the possible justification for conducting the research.   **[6 marks]**

   g) State three possible limitations of the study.   **[3 marks]**

   h) Briefly discuss any five-research ethics you would consider for this
      study   **[10 marks]**

   i) Briefly describe the data analysis methods that you would employ in
      answering your stated objectives.   **[7 marks]**

SECTION B

2) a) A survey with 49 persons was conducted to analyze the success of Pfumvudza campaign. Each respondent was asked to evaluate the overall impression of the Pfumvudza on an eleven-point scale from 0 (bad) to 10 (good). The evaluations are summarized separately with respect to type of occupation of the respondents in the following figure.

Occupation

To analyse the influence of occupation on the evaluation of the Pfumvudza an analysis of variance was performed and the following output was generated

```
    Res.Df   RSS Df Sum of Sq    F  Pr(>F)
`1     48 24.789
 2     45 24.642  3    0.147 0.089 0.96565
```

i   Does the evaluation of the respondents depends on their occupation (Significance level 5%)

[3 Marks]

ii   What is the amount of variance explained   **[3 Marks]**

iii   What is the test statistics   **[3 Marks]**

iv   Report the overall finding of this analysis   **[5 Marks]**

b.   The waiting time (in minutes) at the cashier of two farm market stores with different cashier systems is compared. The following statistical test was performed:

Two Sample t-test data: Waiting by farm market
t = 3.8575, df = 132, p-value = 0.9999
alternative hypothesis: true difference in means is less than 0
95 percent confidence interval:
   -Inf 3.552905
sample estimates:
 mean in group Sparag mean in group Consumo
       5.859404   3.373846

(i)   What test was conducted on the data   **[2 Marks]**
(ii)   What was the absolute value of the test Statistic   **[3 Marks]**
(iii)   What is the p value   **[2 Marks]**

(iv)   Report the overall finding of the test.   **[4 Marks]**

3) Write notes on the following concepts in relation to data collection methods:

       i.   Key informant interviews   **[5 marks]**

      ii.   Focus group interviews.   **[5 marks]**

    iii.   Observation method.   **[7 marks]**

    iv.   Survey method.   **[8 marks]**

4) The research process is like a journey during which important decisions and steps are made and followed. Explain this statement in detail.   **[25 marks]**

END OF PAPER