BINDURA UNIVERSITY OF SCIENCE EDUCATION

- AUG 2023

FACULTY OF SCIENCE EDUCATION

DEPARTMENT: CURRICULUM AND EDUCATIONAL MANAGEMENT STUDIES

PROGRAMME: BACHELOR OF SCIENCE EDUCATION HONOURS DEGREE

COURSE CODE: PC102(1). NARRATION: RESEARCH METHODS AND STATISTICS

DURATION: 3 HOURS. TOTAL MARKS: 300

INSTRUCTIONS TO CANDIDATES

- Answer any three questions.
- Each question carries 100 marks.
- Begin each question on a separate answer sheet.
- Relate your answers and examples to your subject of specialisation in the education context.

SECTION A: RESEARCH METHODS
Answer at least one question from section A

1. Compare quantitative and qualitative research. [100 marks]

2. Examine any four ethical considerations in qualitative research. [100 marks]

3. Discuss the importance of a research proposal. [100 marks]

SECTION B: RESEARCH STATISTICS
Answer at least one question from section B

4. a. Distinguish the following terms

   i. population and sample
   ii. parameter and statistic
   iii. independent, dependent and confounding variables
   iv. discrete and continuous variables
   v. nominal and ordinal data
   vi. mean, mode and median (30 marks)]

   b. For the data set below,

16 18 21 16 14

Calculate (70 marks)

i. mean
ii. deviations from the mean
iii. sum of deviations squared
iv. population variance
v. sample variance
vi. population standard deviation
vii. sample standard deviation

[Total marks = 100]

5. a. The heights of 40 students measured in centimetres is shown below

153	169	159	158	161	168	176	158	172	155
168	171	163	154	162	173	161	155	160	172
178	175	157	166	159	160	177	167	157	174
171	166	148	153	173	163	162	150	161	171

i. Draw a stem and leaf diagram to show the distributions of heights
ii. Using the results of 5a plot the data as a histogram
iii. Show how you have calculated the heights of each of the blocks of the histogram
iv. Using the frequency data from above calculate the best estimate for the mean height of the 40 students

(50 marks)

b. Correlation
i. What is correlation?
ii. Distinguish Pearson and Spearman Correlation
iii. Use Spearman Correlation to determine if there is an association between history and algebra.

History	35	23	47	17	10	43	9	6	28
Algebra	30	33	45	23	8	49	12	4	31

(50 marks)

[Total marks = 100]

END OF PAPER