



KABARAK

UNIVERSITY

UNIVERSITY EXAMINATIONS

2010/2011 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

COURSE CODE: EDUC 214

COURSE TITLE: RESEARCH METHODS AND STATISTICS

STREAM: Y2S1

DAY: THURSDAY

TIME: 2.00 – 4.00 P.M

DATE: 25/11/2010

INSTRUCTIONS:

1. Answer **all** questions in **SECTION A – 30 Marks**
2. Any **TWO** questions in **SECTION B – 40 marks**

PLEASE TURNOVER

SECTION A: 30 MARKS

- 1.(a) Define the term research. (1 mark)
- (b) Explain the role of Education research to a practicing teacher in Kenya. (4 marks)
- (c) State FIVE reasons for writing a research proposal. (5 marks)
- (d) Outline the importance of an appendix in a research report. (5 marks)

2.(a) Explain the following terms as used in Educational statistics

- (i) Empirical probability
- (ii) Linear regression
- (iii) Analysis of variance (3 marks)

(b) Draw and give the names of the following shapes of distribution (4 marks)

- (i) Mean = 54, Median = 62, Mode = 70
- (ii) Mean =42, Median = 42, Mode =42
- (iii) Mean =63, Median =58, Mode =52
- (iv) Mean = 71, Mode = 59, Median =72, Mode= 74.

(c)The table below shows raw scores obtained from an IQ test

71 74 76 66 71 80 78 72 82 67

77 68 77 71 82 71 62 85 62 81

63 65 74 64 77 81 64 71 66 66.

Use the table to answer the questions below

- i. Prepare a frequency distribution table with a class interval of 3 and with the highest class of 85-87 (4 marks)
- ii. State the median and the modal classes (4 marks)

SECTION B: 40 MARKS

3 (a) Explain the term Research design (2 marks)

(b) Differentiate the following of Educational research

(i) Descriptive research

(ii) Observation research (2 marks)

(c) Describe the following research designs, stating the characteristics in each case. (12 marks)

(i) Narrative design

(ii) Ethnographic design

(iii) Mixed method design

(d) Compute the pearson correlation coefficient for the corresponding values of x and y from the table below.

x	5	6	5	3	2	3	4	2
y	4	6	5	2	3	4	5	1

Comment on the coefficient found above. (4 marks)

4(a) Explain the following as used in measurement

(i) Discrete variable

(ii) Continuous variable (2 marks)

(b) Distinguish the following criteria for evaluating a measuring tool. (3marks)

(i) Validity

(ii) Reliability

(iii) Practicality

(c) Describe FOUR types of scales commonly used as levels of measurement. (8 marks)

(d) The table below shows two sets of marks got by twelve candidates in an examination

P and Q.

P 65 63 67 64 68 62 70 66 68 67 68 71

Q 68 66 68 65 69 66 68 65 71 67 68 70

- (i) Plot a scatter diagram (5 marks)
- (ii) Comment on the relationship between P and Q. (2 marks)

5.(a) Distinguish between the following concepts

(i) Descriptive statistics and inferential statistics

(ii) Parameters and statistics

(iii) Hypothesis test and non parametric test (6 marks)

(b) The following data was obtained for a physics exam.

Class interval	frequency (f)
80 – 84	2
75 – 79	3
70 – 74	7
65 – 69	9
60 – 64	6
55 – 59	5
50 – 54	4
45 – 49	2
40 – 44	2

- (i) Sketch a frequency polygon for the above score distribution. (4 marks)
- (ii) Calculate the mean and standard deviation. (6 marks)
- (iii) Calculate the semi-interquartile range. (4 marks)