MACHAKOS UNIVERSITY

University Examinations 2019/2020Academic year

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL COMMUNICATION TECHNOLOGY

DECEMBER SESSION EXAMINATION FOR

MASTER OF EDUCATIONAL ADMINISTRATION/ EDUCATIONAL PSYCHOLOGY

ECC 802: EDUCATIONAL STATISTICS

DATE: SCHOOL BASED **TIME:**

INSTRUCTIONS

Answer question ONE in section A and any other THREE questions from section B. All questions carry equal marks.

SECTION A: COMPULSORY (20 MARKS)

QUESTION ONE (20 MARKS)

a) Explain the difference between reliability and validity. In a study evaluating the effectiveness of a new Competency Based Curriculum (Class six English Curriculum) results are measured by an exam given at the end of the year. How would you make sure the results are valid and reliable? (6 marks)

b) The table shows the scores of students in an examination marked out of 100 %.

Marks	No. of Students
83	2
81	2
79	`1
78	10
75	15
64	5
59	2
45	3
30	1
N = 41	

Calculate

i. The mean mark (3 marks)

ii. The mode (1 mark)

iii. The median (2 marks)

iv. The standard deviation (3 marks)

SECTION B ANSWER ANY THREE QUESTIONS

QUESTION TWO (15 MARKS)

a) Give examples of studies in which it is appropriate to use the chi-square test and t-test. In each case, give the reasons for your choice. (6 marks)

b) Discuss the essential assumptions that are recognized when using regression analysis (4 marks)

c) Differentiate between simple and multiple regressions. (2 marks)

d) Construct a regression model for a study set out to investigate the influence of age, education and occupation on financial status of households (3 marks)

QUESTION THREE (15 MARKS)

a) Using relevant examples, define the following terms; (10 marks)

i. Kurtosis

ii. Data

iii. Skewness

iv. Statistics

v. Variable

b) What are some limitations of casual- comparative research? What are some control procedures that can be used to minimize these limitations? (5 marks)

QUESTION FOUR (15 MARKS)

The scores of students in Mathematics is as given below;

Form (1A) 23, 60, 60, 45, 33, 48, 59, 75, 60, 13, 68

(1B) 11,25, 37, 80, 76, 37, 55, 26, 90, 79, 25, 37, 65

(1C) 23, 30, 30, 37, 38, 40, 40, 40, 42, 43, 43, 52, 55, 56, 70

a) Calculate the standard deviation for each group, form 1A and form 1B (6 marks)

b) Calculate the standard deviation for the combined groups -form IA and 1B (5 marks)

c) Compute the t-test. (4 marks)

QUESTION FIVE (15 MARKS)

a) Explain why it is important to conduct normal distribution tests before analyzing data. (2 marks)

b) Assuming you have collected data on KCSE mean grades of schools in 6 counties. You wish to summarize the mean grades by county using a chart. Which is the most appropriate chart that can be used to perform the task? justify your answer. (3 marks)

c) Differentiate between a one sample t-test and an independent sample t-test. (2 marks)

d) Interpret and explain the results of the hypothesis test contained in tables 2 (8 marks)

Table 2

Group Statistics					
Scale	Gender	N	Mean	Std. Deviation	Std. Error Mean
Students motivation to learn physics	Male	40	4.0573	.43702	.06588
	Female	50	4.0189	.47439	.07907