



MACHAKOS UNIVERSITY

University Examinations 2019/2020 Academic Year

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL MANAGEMENT AND CURRICULUM STUDIES

DECEMBER SESSION EXAMINATION FOR

DIPLOMA IN EDUCATION

EMP 701: EDUCATIONAL STATISTICS AND EVALUATION

DATE: SCHOOL BASED

TIME:

INSTRUCTIONS

Answer Question ONE and any other TWO questions

QUESTION ONE (20 MARKS) (COMPULSORY)

- a) Using relevant examples, justify the use of the four scales of measurement as applied in education. (8 marks)
- b) In a mathematics test for a class of 20 students, the scores were as indicated in Table 1.0. Use the data to compute the Mean, Median, Mode and the Standard Deviation of the distribution.

Table 1.0: Mathematics Scores

Score	40	45	47	52	57	60	64	70	75
Frequency	2	2	4	2	3	3	2	1	1

(12 marks)

- c) The following are the number of visitors received over the past year by 90 pupils in a boarding primary school:

0	52	21	20	21	24	1	12	16	12
16	50	40	28	36	12	47	1	20	7
9	26	46	52	27	10	3	0	24	50
24	19	22	26	26	50	23	12	22	26
23	51	18	22	17	24	17	8	28	52
20	50	25	50	18	52	46	47	27	0
32	0	24	12	0	35	48	50	27	12
28	20	30	0	16	49	42	6	28	2
16	24	33	12	15	23	18	6	16	50

- i) Using a class width of 5, construct a frequency distribution table (5 marks)
- ii) Construct a bar chart for the grouped data (5 marks)

QUESTION TWO (20 MARKS)

- a) Explain the purpose of *measuring and evaluation* in education; (2 marks)
- b) By the use of examples, explain the **four** categories of purpose-based evaluation in education (8 marks)
- c) Assuming that you have been contracted to conduct an evaluation of an educational program, explain the activities that you will undertake during the planning phase. (10 marks)

QUESTION THREE (20 MARKS)

- a) Explain the merits of any **four** methods of determination of reliability of a measurement tool; (4 marks)
- b) Using appropriate examples, illustrate how any **four** types of validity can be applied in a test (8 marks)
- c) By the use of relevant examples, explain any **four** threats to reliability in measurement. (8 marks)

QUESTION FOUR (20 MARKS)

- a) Construct any **six** learning objectives to illustrate the six levels of the blooms taxonomy as applied in teaching (6 marks)
- b) During a certain term, Mr. Joseph, a Form Two mathematics teacher taught the following topics whose time allocation is as indicated

Topic	Hours
Cubes and Cube Roots	3
Reciprocals	7
Indices and Logarithms	18
Equations and straight lines	12
Congruency	12
Rotation	12

Assuming that he wants to set an end of term examination of 50 questions, make a table of specification to show the weights of each topic in the examination. (14 marks)

QUESTION FIVE (20 MARKS)

- a) By the use of relevant examples, distinguish between educational goals and Instructional objectives (4 marks)
- b) By the use of relevant examples, explain the steps that should be followed in writing of an instructional objective (8 marks)
- c) Explain the merits of the following statistical tools as used in measurement and Evaluation
- i The Range (2 marks)
 - ii The Standard Deviation (2 marks)
- d) Scores on a Continuous assessment Test (CAT) were normally distributed and had a Mean of 10 and a Standard Deviation of 3. For each score below, find the Z-Score
- i. 5; (1 mark)
 - ii. 7; (1 mark)
 - iii. 12; (1 mark)
 - iv. 15. (1 mark)