MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY & SPECIAL NEEDS EDUCATION

FOURTH YEAR APRIL SESSION EXAMINATION FOR

BACHELOR OF EDUCATION

EPS 400: EDUCATIONAL TESTING AND MEASUREMENT

DATE: 19/7/2021   **TIME: 8:30 – 10:30 AM**

INSTRUCTIONS

Answer Question ONE and any other TWO Questions

QUESTION ONE (30 MARKS) (COMPULSORY)

a) State the scale (level) of measurement and the type of variable (continuous or discrete) for each of the following:

   i.   Age of students in a form two class.

   ii. Ranking of performance of schools after they have been designated as excellent, best, satisfactory and worst.

   iii. Classification of job applicants by counties.

   iv. Assigning of numbers to represent variables in a research.

   v.   Total number of students in fourth year of study at Machakos University.

b) Discuss how the following factors affect reliability of a test

   i.   Speed

   ii. Test difficulty

   iii. Group homogeneity

   iv. Test length

   v.   Subjective scoring   (10 marks)

c) Distinguish between the following terms:

   i.   Evaluation and measurement

   ii. Standard scores and percentile ranks.

   iii. Measures of variability and measures of relationship.

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     iv.   Descriptive and Inferential statistics

     v.   Test and Examination   (10 marks)

QUESTION TWO (20 MARKS)

The following data shows the scores obtained from form one biology test.

28,25,23,25,28,30,24,28,32,26,33,27,31,27,31,22,30,32,30,28,.

Compute the following measures of:

a)   Central tendency

     i.   Mode   (2 marks)

     ii.   Median   (2 marks)

     iii.   Arithmetic mean   (4 marks)

b)   Variability

     i.   Range   (2 marks)

     ii.   Mean deviation   (4 marks)

     iii.   Standard deviation   (4 marks)

c)   Using the results in (a) above, describe the shape of the distribution.   (2 marks)

QUESTION THREE (20 MARKS)

a)   Explain five factors that may affect the choice of an item format (or question type) to use in class tests.   (10 marks)

b)   Distinguish between the following sets of terms:

     i.   Test reliability and test validity.

     ii.   Test-retest and Parallel form methods of estimating reliability of a test.

     iii.   Norm-referenced and criterion-referenced testing.

     iv.   Essay and objective type of tests.

     v.   Positively skewed distribution and negatively skewed distribution.   (10 marks)

QUESTION FOUR (20 MARKS)

a)   Explain two purposes of tests and measurements to each of the following:

     i.   Teacher;   (4 marks)

     ii.   Learner;   (4 marks)

     iii.   Administration.   (4 marks)

b)   Explain four roles of evaluation in education.   (4 marks)

c)   Differentiate between formative and summative evaluation, citing an example in each.

(4 marks)

QUESTION FIVE (20 MARKS)

a)   Describe each of the different types of test formats that may be used in class tests

(10 marks)

b)   The table below shows a summary of students` responses in a multiple-choice item (or question).

Options	A	B	C	D*	Omits	
Upper group	4	0	6	50	0	60
Lower group	35	0	2	23	0	60

D* is the key (correct answer)

   i.   Calculate the

         Item difficulty index (P)   (2 marks)

         Item discrimination index (D)   (2 marks)

   ii.   Comment on the quality of the item in relation to the item analysis data obtained in (i) above.   (2 marks)

   iii. Comment on the quality of each destructor   (4 marks)