



MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic year

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SPECIAL NEEDS EDUCATION

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENTION)

BACHELOR OF EDUCATION (SPECIAL NEEDS EDUCATION)

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF EDUCATION (ARTS)

EPS 400: EDUCATIONAL TESTING & MEASUREMENT

DATE: 22/1/2021

TIME: 8.30-10.30 AM

INSTRUCTIONS:

Answer Question **One** and any other **Two** Questions

QUESTION ONE (30 MARKS)

- a) Differentiate between the following terms:
- Achievement test and aptitude test
 - Sample and population
 - Test validity and test reliability
 - Test-retest and parallel-Form methods of estimating reliability.
 - Measures of variability and measures of relationship (10 marks)
- b) State the scale (or level) of measurement and the type of variable (continuous or discrete) In each of the following measures:
- Temperature in degrees Celsius
 - Volume of milk containers in cubic centimeters from Zero to 200 cubic centimeters.
 - Desks labeled 10-25 at an ECE Centre .
 - Tutorial Fellows, lecturer, Senior Lecturer, Associate Professor and Professor
 - (V) The weights of all the PPI pupils in Dara School. (10 marks)

- c) Explain five factors that may affect the choice of an item format(or question type) to use on class test. (10 marks)

QUESTION TWO (20 MARKS)

- 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. (10 marks)
- b) Outline four characteristics of a normal curve (4 marks)
- c) Differentiate between formative evaluation and summative evaluation citing examples in each, respectively. (4 marks)
- d) Explain the effect of each of the following on the quality of a test:
- (i) Use of a test specifications table
 - (ii) Small or large number of items in the test
 - (iii) Mixing difficult, moderate and easy items in an appropriate proportion
- when preparing a test. (6 marks)
- e) Discuss the importance of a report form (card) to each of the following stakeholders
- Student
Teacher
Parents
- (6 marks)

QUESTION THREE (20 MARKS)

- a) The table below gives a summary of students' response on a multiple choice item (or question)

	A	B	C	D*		
Options	A	B	C	D*		
Upper group	5	0	6	53	0	60
Lower group	2	6	14	32	0	60

D* is the key for the item.

- (i) For the test item, calculate the item difficulty index (P) and item discrimination index (D)
(4 marks)
- (ii) Comment on the quality for the item in the light of the item analysis Data obtained in b (i) above.
(2 marks)

b) The frequency distribution table below shows the score on a form 2 English test.

Score	3	8	13	18	23	28	33	38
Freq	1	2	3	5	9	20	8	2

Using the information above, compute the following measures of:

- i. Central tendency;
- Mode (1 mark)
- Median (2 marks)
- Mean (3 marks)
- ii. Variability
- Range (2 marks)
- Mean deviation (3 marks)
- Standard deviation (3 marks)

QUESTION FOUR (20 MARKS)

- a) Outline **three** advantages of using each of the following in class tests
- i. Essay items (3 marks)
- ii. Objective items (3 marks)
- b) Explain each of the of the following question types applied in test development
- i) Essay items (or questions) (6 marks)
- ii) Objective items (or questions) (8 marks)

QUESTION FIVE (20 MARKS)

- a) Distinguish between the following terms as used in statistics:
- i) Positively skewed distribution and negatively skewed distribution;
- ii) Parameter and Statistic;
- iii) Inferential statistics and Descriptive statistics;
- iv) An Ogive and a Frequency table;
- v) Unimodal distribution and bimodal distribution. (10 marks)
- b) Explain **two** purposes of tests and measurements to each of the following:
- i. Teacher; (4 marks)
- ii. Learner; (4 marks)
- iii. Administration (2 marks)