



# MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SPECIAL NEEDS EDUCATION  
AND EARLY CHILDHOOD EDUCATION

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF  
EDUCATION

EPS 400: EDUCATIONAL TESTING AND MEASUREMENT

DATE:14/12/2017

TIME: 2.00-4.00 PM

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## INSTRUCTIONS

Answer Question One and Any Other Two Questions

### QUESTION ONE (30 MARKS)

- a) State the scale (level) of measurement and type of variable (continuous or discrete) for each of the following:
- Age of students in a form two class.
  - Ranking of performance of schools after they have been designated as excellent, best, satisfactory and worst.
  - Classification of job applicants by counties.
  - Assigning of numbers to represent variables in a research.
  - Total number of students in fourth year of study at Machakos University.
- (10 marks)
- b) Distinguish between the following sets of terms:
- Test reliability and test validity.

- ii. Descriptive statistics and inferential statistics.
- iii. Norm-referenced and criterion-referenced testing.
- iv. Essay tests and objective tests.
- v. Positively skewed distribution and negatively skewed distribution.

(10 marks)

- c) The following information shows the performance of a student in three subjects

| Subject     | mean | s.d | score | number of students |
|-------------|------|-----|-------|--------------------|
| Mathematics | 75.4 | 6.3 | 78.2  | 100                |
| Physics     | 85.6 | 4.1 | 83.4  | 108                |
| Biology     | 88.2 | 3.5 | 89.2  | 120                |

Using the data given, determine the subject in which the student performed;

- i. Poorest
- ii. Best

(5 marks)

- d) The table below shows a summary of students' responses on a multiple choice item.

| GROUP       | OPTIONS |   |    | OMITS |   | TOTAL |
|-------------|---------|---|----|-------|---|-------|
|             | A*      | B | C  | D     |   |       |
| UPPER GROUP | 43      | 3 | 11 | 3     | 0 | 60    |
| LOWER GROUP | 35      | 0 | 25 | 0     | 0 | 60    |

A\* Is the key (correct option)

- i. Compute the:

- I. Difficulty index;
- II. Discrimination index.

(4 marks)

- ii. Comment on the quality of the items using the results in (i) above

(1 mark)

## QUESTION TWO (20 MARKS)

- a) 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)

- b) Using appropriate examples, clearly distinguish between the following terms:
- Evaluation and measurement
  - Standard scores and standardized scores.
  - Measures of variability and measures of relationship.
  - Descriptive and Inferential statistics
  - Test and Examination (10 marks)

### QUESTION THREE (20 MARKS)

- a) Explain two purposes of the tests and measurements to each of the following:
- Teacher; (4 marks)
  - Learner; (4 marks)
  - Administration. (4 marks)
- b) Explain four roles of evaluation in education. (4 marks)
- c) Citing examples, differentiate between formative evaluation and summative evaluation, (4 marks)

### QUESTION FOUR (20 MARKS)

- a) 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:

- Central tendency;
  - Mode (1 mark)
  - Median (2 marks)
  - Mean (3 marks)
- Variability
  - Range (2 marks)
  - Mean deviation (5 marks)
  - Standard deviation (5 marks)
- Describe fully the shape of the distribution using the results in (i) above . (2 marks)

**QUESTION FIVE (20 MARKS)**

- a) Discuss five functions of the Kenya Certificate of Secondary Education (KCSE) examination in the Kenya Education System. (10 marks)
- b) Explain five factors that may affect the choice of an item format (or question type) to use on Class test. (10 marks)