



MACHAKOS UNIVERSITY

University Examinations For 2023/2024 Academic Year

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND SNE

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION SCIENCE AND

BACHELOR OF EDUCATION SPECIAL NEEDS

BACHELOR OF EDUCATION ARTS,

EPS 400: EDUCATIONAL TESTING AND MEASUREMENT

DATE: _____

TIME: _____

INSTRUCTIONS:

- i) Answer Question **ONE** and Any Other **TWO** in the answer booklet provided.
- ii) Do not write on the question paper

QUESTION ONE (30 MARKS) COMPULSORY

- a) Discuss **five** factors that affect the reliability of a test (10 marks)
- b) State the scale (or level) of measurement and the type of variable (continuous or discrete)

In each of the following:

- i. Numbers assigned to desks of different departments.
- ii. Proficiency in language graded into categories of good, fair, poor.
- iii. The score you obtained in a statistics test.
- iv. The weights of the workers in Machakos University.
- v. V) The ranking of secondary schools after they have been designated as Excellent, Best, Satisfactory, and Worst in KCSE Examination performance (10 marks)

- c) Distinguish between the following terms as used in statistics:
- i. Measures of central tendency and Measures of relationship
 - ii. Sample and Population;
 - iii. Scatter graph and Histogram
 - iv. A frequency polygon and a Frequency table;
 - v. Normal distribution and Skewed distribution. (10 marks)

QUESTION TWO (20 MARKS)

- a) Explain the following terms as used in statistical analysis of test items
- Item difficulty index
 - Item discrimination index (4marks)
- b) Item analysis results showed that 126 out of 160 students in the upper group answered an item correctly and 86 out of 160 students in the lower group answered the same item correctly.
- (i) Determine the difficulty index (P) of the item. (2marks)
 - (ii) Determine the discrimination index (D) of the item (2marks)
 - (iii) Comment on the quality of the item based on the result in (i) and (ii) above (3 marks).
- c) Discuss three factors considered when evaluating the quality of test items. (9 Marks)

QUESTION THREE (20 MARKS)

The following scores were obtained by 30 Form one students in an English test:

46	31	18	39	40	38
37	19	15	26	14	37
24	41	18	19	21	25
31	10	20	21	32	46
20	30	32	27	31	37

- a) Prepare an inclusive grouped frequency distribution table using a class interval of five units and starting with 10-14 as the lowest group. (5marks)
- b) Using the frequency table in (a) above
- i. Draw a histogram (use the graph paper at the back of answer booklet) (4marks)
 - ii. Use the histogram to determine the mode score (3marks)
 - iii. Draw an Ogive (use the graph paper at the back of answer booklet) (4marks)
 - iv. Use the Ogive to determine the median score (3marks)

- c) Calculate the arithmetic mean for the distribution. (3marks)
d) Describe fully the shape of the distribution using your results in b (ii, iv) and c above. (2marks)

QUESTION FOUR (20 MARKS)

- a) i) Define the meaning of the term 'Validity of a test'. (1 mark)
ii) Describe three types of test validity (9marks)
a) Discuss five challenges faced in online administration of university examinations (10marks)

QUESTION FIVE (20 MARKS)

- a) Explain **four** advantages of using each of the following in class tests
i) Essay items (4marks)
ii) Objective items (4marks)
b) Explain six purposes of tests and measurements in the Kenya education system (12Marks)