KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2008/2009
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF EDUCATION
EPS 402: EDUCATIONAL STATISTICS AND EVALUATION

DATE: Friday 28th November 2008   **TIME: 2.00 p.m. – 4.00 p.m.**

INSTRUCTIONS:
1. **This paper is divided into two Sections A and B.**
2. **Attempt ALL questions in BOTH Sections.**
3. **Relevant formulae and standard normal distribution tables are provided at the end of the question paper.**
4. **Scientific calculators may be used in this examination.**
5. **Use of Mobile Phones is strictly prohibited.**

Section A: (40 marks)

Q1. Make a clear distinction between the following concepts using relevant examples.
     (a)   Population and sample.
     (b)   Discrete and continuous variables.
     (c)   Ordinal and interval scales of measurement.   [6 marks]

Q2. Given the following distribution of scores:

x	10	11	12	13	14	15	16	17	18	19	20
f	1	1	2	4	5	8	6	4	5	3	1

     (a)   Determine the following measures:
           (i)   Mode   [½ mark]
           (ii)   Range   [2 marks]
           (iii)   Median (Exact)   [1 ½ marks]
           (iv)   Mean   [2 marks]
           (v)   Standard deviation.   [3 marks]

     (b)   Use the data in the above table to find:
           (i) P_{75}.   [1 ½ marks]
           (ii)   Percentile rank for the score of 16.   [2 marks]

Q3.   If the mean of a distribution is given as 86 and standard deviation 16, complete the table below:

Score (x)	Z-score	Percentile Rank	Stanine
78	_____	_____	_____
_____	- 2	_____	_____
_____	_____	_____	8
_____	_____	90	_____

Q4.   Describe any FOUR (4) roles of evaluation in education.   [6 marks]

Q5.   (a)   Make a clear distinction between the concepts "reliability" and "validity" as used in testing.
       (b)   Describe fully any two methods of estimating test reliability. [5 marks]
       (c)   Explain any 3 (three) of the following types of validity:
              (i)   Content validity.
              (ii)   Construct validity.
              (iii)   Concurrent validity.
              (iv)   Predictive validity.
              In your explanation show under what conditions each of the described validity will be most relevant.   [6 marks]

Section B: (30 marks)

Q6.   (a)   Define the concept "correlation".   [1 mark]
       (b)   State two functions of scatter diagram.   [1 mark]
       (c)   Differentiate between Pearson product moment correlation coefficient, (r_{xy}) and Spearman Rank order correlation coefficient (r_s or rho).
                                                              [2 marks]
       (d)   The following are measures of two variables x and y; for 10 respondents.

Respondent	1	2	3	4	5	6	7	8	9	10
X	10	9	2	3	7	4	1	6	8	5
y	10	7	4	2	8	1	3	9	5	6

              (i)   Compute the Pearson product moment correlation coefficient (r_{xy}) for the data.
              (ii)   Calculate the Spearman rank order correlation coefficient (r_s or rho).   [4 marks]
              (iii)   Interpret the relationship between x and y using the indices obtained in (i) and (ii) above.   [1 mark]

Q7.   (a)   Define and give two functions of test specification.   [3 marks]
       (b)   Differentiate between objective and essay types of examinations.
                                                              [2 marks]
       (c)   State two advantages and two disadvantages of objective and essay examination formats.   [4 marks]
       (d)   Discuss 4 (four) factors a teacher should put into consideration when deciding on the type of test/examination to give to his/her learners.
                                                              [6 marks]