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KENYATTA UNIVERSITY EPS 402: EDUCATIONAL STATISTICS AND EVALUATION Past Paper

KENYATTA UNIVERSITY UNIVERSITY... DETACHNO HIGHLIGHTING KENYATTA UNIVERSITY UNIVERSITY EXAMINATIONS 2012/13 INSTITUTE OF OPEN LEARNING (IOL) EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION EPS 402: EDUCATIONAL STATISTICS AND EVALUATION

DATE: Thursday, 3rd February, 2011 TIME: 2.00 p.m. – 4.00 p.m. -----

INSTRUCTIONS: Answer question ALL questions

SECTION A: (40 MARKS)

Q.1

a) Clearly distinguish between the following terms:

- i) Measurement and evaluation.
- ii) Skewness and Kurtosis of a distribution.
- iii) A histogram and a frequency polygon. (3 marks)

b) For each of the following indicate the scale (or level) of measurement.

- i) Temperature in degrees Celsius.
- ii) Volume of milk containers in cubic centimeters from Zero to 200 cubic centimeters.
- iii) Rooms 101 – 250 at the Safari park Hotel.
- iv) Tutorial Fellows, Lecturer, Senior Lecturer, Associate Professor and Professor. (2 marks)

Q.2 Given a distribution having the following scores obtained on a form 3 English test: 11, 12, 13, 15, 15, 15, 16, 17, 18, 18. Compute the following measures of:

a) Central tendency:

- i) Mode (1/2 mark)
- ii) Median (exact) (1 ½ marks)
- iii) Mean (2 marks) b) Variability
- iv) Range (1/2 mark)
- ii) Mean deviation (2 marks)
- iii) Variance (3 marks) c)

i) Using measures of central tendency obtained in

(a) above, describe fully the shape of the distribution of scores, and also the performance of the students on the test. (2 marks)

ii) Briefly describe graphical presentation of data, and explain its importance in descriptive statistics. (2 marks)

Q.3 a) Using appropriate examples, differentiate between the following terms:

- i) Achievement test and aptitude test
- ii) Measurement and evaluation
- iii) Face validity and content validity

iv) Test-retest and parallel – Forms methods of estimating reliability. (4 marks)

b) Using suitable examples, explain how the following stakeholders may benefit from the teaching learning situation in the classroom.

i) Administrators

ii) Students

iii) Teachers

iv) Guidance and counselors. (6 marks)

Q.4 a) Briefly discuss the importance of a report form (or card) to

i) Student

ii) Parents

iii) Teachers (4 ½ marks)

b)

i) Give two advantages of using a table of test specifications when preparing a classroom test. (1 mark)

ii) How are paper-and-pencil tests different from oral tests? Explain. (1 mark)

iii) Give four factors that will affect the choice of an item format (or question type) to use on your test. (2 marks)

iv) How are the supply type of items different from the selection type of items? Explain using suitable examples. (1 ½ marks)

SECTION B: (30 MARKS)

Q.5 a)

i) What is correlation?

ii) How is a scatter diagram useful in correlation? Explain. (1 ½ marks)

b) The following scores were obtained when a group of ten Form 2 students were tested in

Mathematics and Physics. Student A B C D E F G H I J Mathematics 3 5 6 4 3 7 6 5 4 7 Physics 4 3 2 1 2 3 3 5 4 2

i) Compute the Pearson product moment correlation coefficient r_{xy} , for the above scores. (6 ½ marks)

ii) Interpret the calculated value (r_{xy}). (1 mark)

iii) Calculate the Spearman Rank order correlation coefficient (r_s) for the above data. (4 ½ marks)

iv) State two assumptions underlying the Spearman Rank order correlation (r_s) (1 mark)

Q.6 a)

i) How is item analysis important in test construction? Explain. (1 mark)

ii) Distinguish between Item Difficulty Index and Item Discrimination index. (2 marks)

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

Group	Options	Omits	Total	A	B	C	D*
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Upper group	5	0	2	5	3	0	60
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Lower group	2	0	20	3	2	6	60
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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

iii) Evaluate the effectiveness of all the distractors for the test item. (2 marks)

c) Distinguish between each of the following

i) mastery test and survey test

ii) Informal test and standardized test

iii) Speed test and power test

iv) Objective test and Subjective test. (2 marks)

d)

i) Why is it desirable to use a variety of evaluation techniques when evaluating learning outcomes?

Explain. (1 mark)

ii) Differentiate between a norm-referenced interpretation and a criterion-referenced interpretation of a classroom test. (3 marks)