UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

SUPPLEMENTARY EXAMINATION 2005

TITLE OF PAPER   :   MEASUREMENT, TESTING AND EVALUATION

COURSE NUMBER   :   EDF 321 P G C E

TIME ALLOWED   :   THREE HOURS

INSTRUCTIONS   :
1. THERE ARE TWO SECTIONS IN THIS PAPER: SECTIONS A AND SECTION B.

2. ANSWER ALL ITEMS IN SECTION A. THERE IS ONLY ONE CORRECT ANSWER TO EACH ITEM. PUT A CIRCLE AROUND THE CORRECT RESPONSE ON THE ANSWER CARD PROVIDED.

3. YOU ARE ADVISED TO SPEND NOT MORE THAN 45 MINUTES IN THIS SECTION.

4. ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS IN SECTION TWO MAKING A TOTAL OF THREE QUESTIONS IN ALL.

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED TO DO SO BY THE INVIGILATOR.

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SECTION B

INSTRUCTION: **ANSWER ALL THE ITEMS IN THIS SECTION BY PUTTING A CIRCLE AROUND THE CORRECT RESPONSE.**

ITEM 1.
In the process of tabulation, marks can be represented and displayed graphically by

- a. an ogive curve
- b. a frequency distribution
- c. a pie chart
- d. a histogram
- e. all of the above

ITEM 2.
The term evaluation refers to

- a. process of making judgements
- b. a continuous objective
- c. an ultimate objective
- d. a healthy objective
- e. a mastered objective

ITEM 3.
If a test is very easy, the resulting distribution is likely to be

- a. symmetrical
- b. positively skewed
- c. normal
- d. all of the above
- e. none of the above

ITEM 4.
It is the most versatile of all the objective test items available. Of which test items is this statement referring?

- a. Multiple choice items
- b. Matching items
- c. Essay test items
- d. True-false items
- e. Completion test items

ITEM 5.
The term measurement refers to

    a.   the process of assigning scores
    b.   gathering test scores
    c.   formal and informal assessment
    d.   comparing one child with another
    e.   All of the above

ITEM 6.
The bell-shaped curve possesses one of the following characteristics

    a.   the tails of the curve touch the base line
    b.   there are two standard deviations on either side of the mean score
    c.   the curve has a skewness of 1.00
    d.   68.26% of the cases lie between $\pm$ 1 standard deviation from the mean
    e.   the curve is bimodal

ITEM 7.
One way of helping children to grow intellectually is

    a.   to punish them when they fail a test
    b.   to praise them when they do well
    c.   to give them tasks that stretch them cognitively
    d   not to comment on their performance at all
    e.   to give them an I.Q. test.

ITEM 8.
Two sets of scores for ten students were found to have a correlation coefficient of 1.00. This means that the relationship between

    a.   the two sets of scores are not related.
    b.   as the scores in one variable increase, the scores on the other variable decrease.
    c.   the relationship between the two sets of scores is a perfect positive one.
    d.   as the scores in one variable tend to decrease the scores in the other variable tend to increase.
    e.   the two sets of scores are moderately related

ITEM 9.
Which of the following is suitable for testing students' skills after a course of Instruction?

a.   A formative test
b.   A summative test
c.   A diagnostic test
d.   An achievement test
e.   A mastery test

ITEM 10,
In a positively skewed distribution, which measure of central tendency has the largest value? It is the

a.   range
b.   mode
c.   median
d.   mean
e.   variance

ITEM 11.
Which of the followings is best used for selection?

a.   Norm referenced test
b.   An aptitude test
c.   A competency test
d.   A criterion referenced test
e.   None of the above

ITEM 12.

When a distribution of test scores is negatively skewed, one might infer that the test

a.   was easy
b.   had leaked
c.   was moderate
d.   was difficult
e.   was fair

ITEM 13.

If one is able to use a formula to solve a problem, according to Bloom's taxonomy, this would be

    a.   synthesis
    b.   evaluation
    c.   analysis
    d.   application
    e.   comprehension

ITEM 14.
If an intelligence test measures the I.Q.of a student, and on successive applications it is consistent with itself. This means that the test has

    a.   validity
    b.   usability
    c.   reliability
    d.   acceptability
    e.   readability

ITEM 15.
At the end of the year, Jabulisile scored 95% in the examination, surpassing everyone in the school. This is an example of

    a.   curriculum evaluation
    b.   formative evaluation
    c.   norm referencing
    d.   summative
    e.   diagnostic evaluation

ITEM 16.
It is the least versatile of all the test items available. Of which test items is this statement referring?

    a.   Multiple choice items
    b.   Matching items
    c.   Essay test items
    d.   True-false items
    e.   Completion test items

ITEM 17.

A test used to determine future performance of a student in a given area of study is

    a.   an aptitude test
    b.   an attitude test
    c.   an Interest test
    d.   an achievement test
    e.   a personality test

ITEM 18.

When the mode < median < mean, the distribution of test scores is said to be

    a.   leptokurtic
    b.   negatively skewed
    c.   normal
    d.   positively skewed
    e.   truncated

ITEM 19.

Which type of test items has a serious disadvantage of subjectivity?

    a.   Multiple choice
    b.   Essay type
    c.   completion
    d.   True-false
    e.   Matching type

ITEM 20.

When there are two highest scores in a given distribution and they are not adjacent to each other, we can say that such a distribution is

    a.   mesokurtic
    b.   a mean
    c.   a mode
    d.   unimodal
    e.   bimodal

ITEM 21.

Which of the following cannot be true of correlation coefficients?

    a.   1.41
    b.   -0.48
    c.   0.09
    d.   -0.82
    e.   0.71

ITEM 22.

Which of the following statement is true of the bell-shaped curve?

    a.   The tails of the curve touch the base line
    b.   There are two standard deviations on either sides of the mean.
    c.   The curve has a skewness of 1.00
    d.   That 34.13% of the cases lie between $\pm$ 1 standard deviation from the mean
    e.   None of the above

ITEM 23.

A teacher gives her class a written exercise on the concept she has taught. This is a form of

    a.   diagnostic evaluation
    b.   informative evaluation
    c.   summative evaluation
    d.   formative evaluation
    e.   illuminative evaluation

ITEM 24.

Two sets of scores for ten students were found to have a correlation coefficient of 0.75. This means that

    a.   the two sets of scores are not related.
    b.   as the scores in variable one increases, the scores on the other decreases.
    c.   the relationship between the two sets of scores is fairly good..
    d.   as the scores in one variable decrease the other decreases.
    e.   there is no relationship between the two variables.

ITEM 25.

A Secretarial College offers certificates only to students who are able to type 60 words per minutes. This is a form of

    a.   a Criterion reference test
    b.   a speed test
    c.   a power test
    d.   a norm referenced test
    e.   a discrimination test

ITEM 26,

Which of the following methods of validity makes use of the table of specification?

    a.   Concurrent validity
    b.   Content validity
    c.   Predictive validity
    d.   Construct validity
    e.   Criterion related validity

ITEM 27.

Which of these is not true of a multiple choice test?

    a.   It is easy to construct
    b.   It takes a short time for students to write
    c.   It is easy to score
    d.   It covers a large area of the syllabus
    e.   It can be scored mechanically

ITEM 28.

Which type of validity compares test scores with other measures of performance?

    a.   Construct validity
    b.   Criterion related validity
    c.   Face validity
    d.   Content validity
    e.   Test-retest validity

ITEM 29.

Which of these is an advantage of oral tests?

    a. Language deficience can easily be detected
    b. The candidate can be observed as he/she responds to the question.
    c. Responses that need further clarification can be followed up Immediately.
    d. Assessment is done as the candidate is being examined.
    e. All of the above

ITEM 30.
Evaluation to determine the extent to which the pupils have already mastered the objectives of the planned instructions is known as

      a.   placement evaluation
      b.   aptitude evaluation
      c.   product evaluation
      d.   skills assessment
      e.   diagnostic evaluation

ANSWER QUESTIONS 32 TO 36 FROM THE INFORMATION PRESENTED BELOW:

	A	B	C	D	E*	
UPPER 1/3	1	4	0	3	12	* CORRECT ANSWER
LOWER 1/3	2	4	0	5	9	N = 40

ITEM 31
The item difficulty of the above data is

      a.   0.35
      b.   25.25
      c.   1.50
      d.   52.50
      e.   52.25

ITEM 32.
The discriminating power is
      a.   35.0
      b.   25.25
      c.   5.25
      d.   0.15
      e.   5.35

ITEM 33
How would you say this item is discriminating?
      a.   Fairly well
      b.   Very well
      c.   Poorly
      d.   Moderately
      e.   Not discriminating all

ITEM 34.
How would you describe distracter B?
- a.   Is working well
- b.   Is a good distracter
- c.   Is a useless distracter
- d.   Is a weak distracter
- e.   Is not working at all

ITEM 35.
What would you do with this item?
- a.   I would keep it
- b.   I would modify it and keep it
- c.   I would discard it
- d.   It is a useless distrater and would discard it
- e.   None of the above

ITEM 36.
In the taxonomy of educational objectives, which domain is concerned with attitudes interests and values?

- a.   Cognitive domain
- b.   Psychomotor
- c.   Affective
- d.   Both cognitive and psychomotor
- e.   Cognitive and affective

ITEM 37.
Which is not a characteristic of a good instructional objective?

- a.   Comparability
- b.   Teachability
- c.   Measurability
- d.   Specificity
- e.   Terminal behaviour

ITEM 38.
The advantage of a practical test is that

- a.   it generally requires many supervisors
- b.   it may require specific equipment
- c.   the input may not be easily available
- d.   it requires a lot of preparation
- e.   it gives a child the chance to show what he/he knows.

ITEM 39.

What step should a teacher take to improve the validity of her test?

    a.   Sample as much as possible to improve the validity of her test.
    b.   Make sure that the test is short and precise.
    c.   Ensure that the marking will not take too long
    d.   Clearly specify the test objectives
    e.   Limit test coverage to a small section of the content

ITEM 40.

When the mode = median = mean, the distribution of test scores is said to be

    a.   leptokurtic
    b.   negatively skewed
    c.   normal
    d.   positively skewed
    e.   symmetrical

SECTION B

INSTRUCTION : ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS FROM THIS SECTION MAKING A TOTAL OF THREE QUESTIONS IN ALL.

QUESTION 1

Below is a distribution of scores in a school administration test presented in grouped form:

SCORE	f
75 - 79	1
70 - 74	3
65 - 69	5
60 - 64	7
55 - 59	9
50 - 54	13
45 - 49	8
40 - 44	5
35 - 39	3
30 - 34	2
25 - 29	1

3 marks for completing the table

(a)   Determine (i)   the mean   2 marks
               (ii)   the median and   2 marks
               (iii)   the standard deviation   6 marks

(b)   Find out how many students scored grades of B and E in this group.
                                                      4 marks

(c)   By inspection describe this distribution of scores in terms of its skewness.
                                                      3 marks
                                                    20 MARKS

QUESTION 2,

What do you understand by the term 'usability'? Using suitable illustrations, explain at least four aspects that would render a test usable or unusable
                                                  20 MARKS

QUESTION 3.

(a)   Define the term 'subjectivity' in assessing examination scripts.

5 marks

(b)   Using any THREE suitable examples, explain how you would minimize
      subjectivity in marking essay test items.   .   5 marks each=15marks
                                                              20 Marks

QUESTION 4.
   (A)   Explain the concept of measurement and evaluation.   5 marks

   (b)   Discuss fully how measurement and evaluation can be used to improve
         teaching in a classroom situation.   15 marks

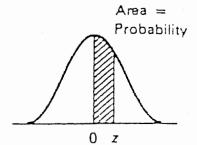   20 MARKS

A P P E N D I X   A

df	.1	.05	.01	.001
1	6.314	12.706	63.657	636.619
2	2.920	4.303	9.925	31.598
3	2.353	3.182	5.841	12.941
4	2.132	2.776	4.604	8.601
5	2.015	2.571	4.032	6.859
6	1.943	2.447	3.707	5.959
7	1.895	2.365	3.499	5.405
8	1.860	2.306	3.355	5.041
9	1.833	2.262	3.250	4.781
10	1.812	2.228	3.169	4.587
11	1.796	2.201	3.106	4.437
12	1.782	2.179	3.055	4.318
13	1.771	2.160	3.012	4.221
14	1.761	2.145	2.972	4.140
15	1.753	2.131	2.947	4.073
16	1.746	2.120	2.921	4.015
17	1.740	2.110	2.898	3.965
18	1.734	2.101	2.878	3.922
19	1.729	2.091	2.861	3.883
20	1.725	2.086	2.845	3.850
21	1.721	2.080	2.831	3.819
22	1.717	2.074	2.819	3.792
23	1.714	2.069	2.807	3.767
24	1.711	2.064	2.797	3.745
25	1.708	2.060	2.787	3.725
26	1.706	2.056	2.779	3.707
27	1.703	2.052	2.771	3.690
28	1.701	2.048	2.763	3.674
29	1.699	2.045	2.756	3.659
30	1.697	2.042	2.750	3.646
40	1.684	2.021	2.704	3.551
60	1.671	2.000	2.660	3.460
120	1.658	1.980	2.617	3.373
α	1.645	1.960	2.576	3.291

SOURCE: APPENDIX C from Downie, N.M., and Heath, R.M.
Basic Statistical Methods, N.Y.; Harper & Row,
Publishers, 1974.

APPENDIX B

Areas for a Standard Normal Distribution

Area = Probability

0   z

Entries in the table represent the area under the curve between $z = 0$ and a positive value of z. Because of the symmetry of the curve, the area under the curve between $z = 0$ and a negative value of z would be found in a like manner.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1025	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2518	.2549
0.7	.2580	.2612	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.49865	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990
4.0	.49997									

STATISTICAL FORMULAE

(1). $\bar{X} = \dfrac{\sum X}{N}$

(2). $\bar{X} = M' = \dfrac{\sum fx'}{N} i$

(3). $x = X - \bar{X}$

(4). $ss = \sqrt{\dfrac{\sum x^2}{N}} \text{ or } \sqrt{\dfrac{\sum x^2}{N-1}}$

(5). $s^2 = \dfrac{\sum x^2}{N} \text{ or } \dfrac{\sum x^2}{N-1}$

(6). $\sum x^2 = i^2 \left[\sum f \ x'^2 - \dfrac{\sum fx'^2}{N} \right]$

(7). $s = \sqrt{\dfrac{\sum X^2}{N} - \bar{X}^2}$

(8). $s = \dfrac{1}{N} \sqrt{N \sum X^2 - \sum X^2}$

(9). $Q = \dfrac{Q_3 - Q_1}{2}$

(10). $z - score = X - \bar{X}/s$

(11). $T - score = 10z + 50$

(12). $r = \dfrac{N \sum XY - \sum X \ \sum Y}{\sqrt{\left[N \sum X^2 - \sum X^2 \right] \left[N \sum Y^2 - \left(\sum Y \right)^2 \right]}}$

(13). $r = \dfrac{\sum xy}{\sqrt{\left(\sum x^2 \right) \left(\sum y^2 \right)}}$

(14). $r = \dfrac{\sum z_x z_y}{N}$

(15). $r_{pb} = \dfrac{\bar{X}_y - \bar{X}_t}{s_t} \left(\sqrt{\dfrac{p}{q}} \right)$

$$(16).b_{yx} = \frac{\sum XY - \left[(\sum X)(\sum Y)/N\right]}{\sum X^2 - \left[(\sum X)^2 / N\right]}$$

$$(17).a_{yx} = \bar{Y} - b_{yx}\bar{X}$$

$$(18).b_{xy} = \frac{\sum XY - \left[(\sum X)(\sum Y)/N\right]}{\sum Y^2 - \left[(\sum Y)^2 / N\right]}$$

$$(19).a_{xy} = \bar{X} - b_{xy}\bar{Y}$$

$$(20).s_{xy} = \sqrt{(\sum Y - \bar{Y})^2 /(N-1)}$$

$$(21).student - t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

$$(22).Y' = a + b_1 X_1 + b_2 X_2 + b_3 X_3$$

$$(23).F_{n_1-1,n_2-1} = \frac{S_g^2}{S_l^2}$$

$$(24).t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\dfrac{S_1^2}{n_1} + \dfrac{S_2^2}{n_2}}}$$

$$(25).t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\dfrac{\sum x_1^2 + \sum x_2^2}{n_1 + n_2 - 2}\right)\left(\dfrac{1}{n_1} + \dfrac{1}{n_2}\right)}}$$

$$26.x^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

$$27.TOTAL_{ss} = \sum X^2 - \frac{(\sum X)^2}{n}$$

$$WITHIN_{ss} = \sum\sum X^2 - \frac{\sum(X)}{n}$$

$$31. df_t = n - 1$$

$$32. df_b = k - 1$$

$$33. df_w = n - k$$

$$MS_b = \frac{SS_b}{df_b}$$

$$34. MS_w = \frac{SS_w}{df_w}$$

$$35. F = \frac{MS_b}{MS_w}$$

$$(15) r_{12.3} = \frac{r_{12} - r_{13} r_{23}}{\sqrt{1 - r^2_{13} \quad 1 - r^2_{23}}}$$

ANSWER CARD

IDENTIFICATION NO................... COURSE NO.: E D F..................

1.	A	B	C	D	E	2.	A	B	C	D	E
3.	A	B	C	D	E	4.	A	B	C	D	E
5.	A	B	C	D	E	6.	A	B	C	D	E
7.	A	B	C	D	E	8	A	B	C	D	E
9.	A	B	C	D	E	10.	A	B	C	D	E
11.	A	B	C	D	E	12.	A	B	C	D	E
13.	A	B	C	D	E	14.	A	B	C	D	E
15.	A	B	C	D	E	16	A	B	C	D	E
17.	A	B	C	D	E	18.	A	B	C	D	E
19.	A	B	C	D	E	20.	A	B	C	D	E
21.	A	B	C	D	E	22.	A	B	C	D	E
23.	A	B	C	D	E	24.	A	B	C	D	E
25.	A	B	C	D	E	26.	A	B	C	D	E
27.	A	B	C	D	E	28.	A	B	C	D	E
29.	A	B	C	D	E	30.	A	B	C	D	E
31.	A	B	C	D	E	32.	A	B	C	D	E
33.	A	B	C	D	E	34.	A	B	C	D	E
35.	A	B	C	D	E	36.	A	B	C	D	E
37.	A	B	C	D	E	39.	A	B	C	D	E
39.	A	B	C	D	E	40.	A	B	C	D	E