UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

FINAL EXAMINATIONS 2006

TITLE OF PAPER : **RESEARCH METHODS AND EVALUATION**

PROGRAMME : **BED III**

COURSE NUMBER : **EDF 320 PAPER 2**

TIME ALLOWED : **THREE (3) HOURS**

INSTRUCTIONS:

1. **This paper is in two parts.**
2. **Answer all items in section one by putting 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 any three questions from Section B.**
5. **Answer cards, formula sheets and the necessary tables are also provided.**

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

1 Speculations about the relationship between two or more variables is called a

a. hypothesis
b. question
c. theory
d. principle
e. construct

2. Which of the following figures are plotted by using the mid point of the class interval?

a. a pie chart
b. a bar chart
c. a frequency polygon
d. an ogive curve
e. all the above

3. A leptokurtic curve has

a. several peaks
b. one peak
c. two peaks
d. a flat top
e. a long tail to the left.

4. Which of these is NOT a measure of central tendency?

a. mean
b. range
c. median
d. mode
e. all the above

5.Which of these is NOT a measure of variability?

a. range
b. standard deviation
c. the quartile deviation
d. the mean of means
e. the variance

6.When a form I class' scores for English are describes as positively skewed, it means that

a. bright students are passing well
b. majority of the students are performing well
c. the test is easy
d. all the students have passed the test
e. the test is difficult

7.Which of these statements is true?

a. The nominal scale has an absolute zero.
b. A positively skewed curve has its tail to the right.
c. A population is taken from a sample.
d. A mode is a measure of variability.
e. A test –retest method is used to measure validity.

8. Which section of a research proposal explains how the research will be carried out?

a. justification
b. literature review
c. hypothesis
d. methodology
e. limitations

9. Which is the first step in identifying a research topic?

a. identifying a research topic
b. reading about the topic of interest
c. writing a research proposal
d. identifying a problem
e. identifying a general area of interest

10. In which of the following tests is the child's performance compared to that of others

a. criterion referenced test
b. power test
c. norm referenced test
d. group referenced test
e. achievement test.

11. What do we call research, answers from which turn out to be abstract?

a. historical
b. applied
c. descriptive
d. basic
e. correlational

12. Which of the following statements would you say is in the null hypothesis?

a. Manndla and James's cars cost the same amount
b. James' car definitely cost less than Mandla's
c. Mandla and James' cars did not cost the same amount
d. James' car cost less than Mandla's.
e. Mandla's car is by far the more expensive of the two.

13. A good interviewing technique requires one to

a. avoid engaging in small talk before starting the formal interview
b. ask leading questions
c. cross examine respondents if they seem deceptive
d. make sure the respondents understand the purpose of each question being asked
e. continue probing the respondent until they get the answer they want.

14 What is the name of the statistical measurement which can be broken down into smaller units with better precision instruments?

a. quantitative
b. continuous
c. discrete
d. discontinuous
e. qualitative.

15. When we divide the sum of values by the number of observations, the resulting value is termed

a. variance
b. median
c. mean
d. range
e. standard deviation

16. A test which becomes increasingly difficult until it is near impossible to do is

    a. a speed test
    b. an achievement test
    c. a power test
    d. a selection test
    e. an aptitude test

17. Which of the following can be referred to as continuous data?

    a. the number of students in a class
    b. the number of pages in a book
    c. the number of cars along a high way
    d. the number of bridges along a river
    e. the height of an electric pole

18. The bell shaped cave possesses one of the following
    a. the tails of the curve touch the base line
    b. there are two standard deviations on either side of the mean.
    c. 68.26% of the cases lie between one standard deviation above and one standard deviation below the mean.
    d. The curve has a skewness of 1.00
    e. The curve is bimodal

19. If a test is very difficult, the resulting distribution of the scores is likely to be
    a. Normal
    b. Symmetrical
    c. Negatively skewed
    d. Positively skewed
    e. None of the above.

20. A scale with an absolute zero is termed
    a. Weighing scale
    b. Summation scale
    c. Ordinal scale
    d. Interval scale
    e. Ratio scale

21. Which of these is derived from a population?
    a. Statistic
    b. Sample
    c. Generalisation
    d. Parameter
    e. Justification

22. When a researcher intensively examines a single individual/institution this would be termed
    a. Experimentation
    b. The survey
    c. The case study
    d. Naturalistic observation
    e. Intensive observation

23. What is the term given to a test that assesses one's potential to do well in a specific task?
    a. Pre-test
    b. Aptitude
    c. Placement
    d. Diagnostic
    e. Selection

24. A very easy test is represented graphically by a
    a. positively skewed curve
    b. negatively skewed curve
    c. normal curve
    d. symmetrical curve
    e. none of the above

25. What is the main function of the achievement test?
    a. It shows how well the student is to perform in a specific task
    b. It shows how well the student is performing in comparison to others
    c. It allows the teacher to assess his own teaching method
    d. It measures what the student has learnt.
    e. It compares the teacher with other teachers.

26. A test in which the students consistently score the same or similar marks is said to be
    a. Subjective
    b. Reliable
    c. Valid
    d. Usable
    e. Accountable

27. A test that does NOT sample most of what has been taught lacks
    a. Reliability
    b. Validity
    c. Discrimination
    d. Usability
    e. Objectivity

28. When a teacher constructs a test, he/she should always consider minimum time in terms of
    a. scoring the test
    b. administering the test
    c. interpreting test results
    d. constructing the test
    e. putting the test items together.

29. In a multiple choice test, there is always a correct statement called
    a. a distractor
    b. an option
    c. a stem
    d. a key
    e. a stem

30. Which of the following test items is <u>most</u> affected by guessing?
    a. Completion
    b. Matching
    c. True/false
    d. Short essay
    e. Multiple choice

31. Which of these is the highest order in the Affective domain?
    a. Organization
    b. Valuing
    c. Characterization
    d. Responding
    e. Receiving

32. In the Affecting domain organization is concerned with
    a. differentiating which values are more important
    b. attaching value to a particular object
    c. becoming predictable
    d. building a consistent internal value system
    e. improving one's skills.

33. When the well known Swazi singer Spooks Mpendula introduced his new type of dance, according to the psychomotor domain this is
    a. creativity
    b. adaptation
    c. mechanism
    d. skillful performance
    e. Origination

40. Which measure of central tendency fluctuates more than the others?
    a. The mean
    b. The mode
    c. The range
    d. The median
    e. The deviation scores.

SECTION B

INSTRUCTIONS: Answer any three questions from this section

1. (a). Write down the formula for calculating the mean. (2 marks)

   (b). Work out the standard deviation of the following scores

   10
   14
   11
   8
   17

   (18 marks)

   (Total: 20 Marks)

2. Discuss any *four* major advantages that the multiple choice type of test has over the essay type of test. ***(4x5 = 20 marks).***

3. Participatory observation research relies on information recorded by the researcher. Discuss any two ways in which the process of data collection can reduce data validity. ***(20 marks)***

4. Explain the importance of the following in research

   a) Pilot study. (10 marks)

   b) Sampling (10) marks)

   (Total: 20 marks)

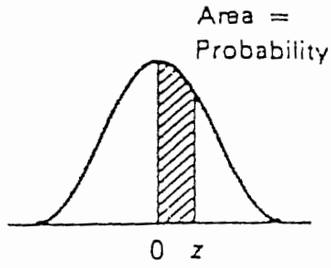
A P P E N D I X A

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



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	.1026	.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). $\bar{X} = \frac{\sum X}{N}$

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

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

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

(5). $s^2 = \frac{\sum x^2}{N} 0r \frac{\sum x^2}{N-1}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$(22).Y' = a + b_1X_1 + b_2X_2 + b_3X_3$$

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

$$(24).t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

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

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

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

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

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

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

UNIVERSITY OF SWAZILAND
ANSWER CARD

IDENTIFICATION NO. ..... **COURSE NO. EDF.....**

1.	a	b	c	d	e	21.	a	b	c	d	e
2.	a	b	c	d	e	22.	a	b	c	d	e
3.	a	b	c	d	e	23.	a	b	c	d	e
4.	a	b	c	d	e	24.	a	b	c	d	e
5.	a	b	c	d	e	25.	a	b	c	d	e
6.	a	b	c	d	e	26.	a	b	c	d	e
7.	a	b	c	d	e	27.	a	b	c	d	e
8.	a	b	c	d	e	28.	a	b	c	d	e
9.	a	b	c	d	e	29.	a	b	c	d	e
10.	a	b	c	d	e	30.	a	b	c	d	e
11.	a	b	c	d	e	31.	a	b	c	d	e
12.	a	b	c	d	e	32.	a	b	c	d	e
13.	a	b	c	d	e	33.	a	b	c	d	e
14.	a	b	c	d	e	34.	a	b	c	d	e
15.	a	b	c	d	e	35.	a	b	c	d	e
16.	a	b	c	d	e	36.	a	b	c	d	e
17.	a	b	c	d	e	37.	a	b	c	d	e
18.	a	b	c	d	e	38.	a	b	c	d	e
19.	a	b	c	d	e	39.	a	b	c	d	e
20.	a	b	c	d	e	40.	a	b	c	d	e