UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

FINAL EXAMINATIONS 2006

TITLE OF PAPER   :   RESEARCH METHODS AND
                             EVALUATION

PROGRAMME   :   BED III

COURSE NUMBER   :   EDF 320 PAPER 1

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.

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1. Characteristics in which individuals differ among themselves are termed

a. statistics
b. data
c. domains
d. parameters
e. variables

2. What do we call measurements which can be broken down into smaller units with precision instruments?

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

3. If a researcher uses the past minutes of a school board to collect data about the institution, the minutes are a/an

a. secondary source
b. historical source
c. primary source
d. invalid source
e. second hand source

4. The difference between the highest and lowest score is a

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

5. When you divide the sum of values by the number of observations, the resulting value is called a

a. mode
b. mean
c. square root
d. variance
e. sum

6. The significance of the study should indicate

a. who will benefit from the study
b. the population of the study
c. who will collect the data
d. the method used for data collection
e. what data will be collected.

7. A simple random sampling technique is one in which

a. the population is first stratified before the sample is selected
b. everyone is included in the sample
c. all members of the population have an equal chance of being included in the sample
d. each member has a 100% chance of being included in the study sample.
e. Only selected members of the population are included in the sample.

8. One advantage of using a questionnaire is that

a. anyone can respond to it
b. it has a high response rate
c. it is easy to construct
d. it reaches people in different parts of a country
e. even those who cannot read can ask others to respond on their behalf

9. Which type of research is used to make predictions?

a. experimental research
b. historical research
c. causal – comparative research
d. descriptive research
e. correlational research

10. Purposive sampling involves selecting

a. a very small sample that the researcher can easily handle
b. as large a sample as possible depending on the size of the research
c. cases that are informational rich with respect to the study goals
d. as large a sample as possible within given costs
e. a sample that actually represent a defined population

11. Which of the following types of researches result in findings that are concrete and specific?

a. applied research
b. descriptive research
c. basic research
d. experimental research
e. historical research

12. When a researcher lives with a group of people to observe them, it is called

a. natural observation
b. subject observation
c. behaviour observation
d. group observation
e. participant observation

13. Which of these must be included in a research proposal?

a. a questionnaire
b. significance of the study
c. an interpretation
d. an analysis
e. a conclusion

14. " Going native" is an expression associated with

a. historical research
b. basic research
c. ethnographic research
d. historical research
e. case study research

15. Findings from case studies

a. can be generalized to a target population
b. can be generalized to other similar cases
c. can be generalized to other similar study samples
d. have no generalisability
e. can be generalized to any group

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16. Which of the following is an important reason for reviewing literature?

a. to obtain information about possible new areas of research
b. to gain insight into statistical techniques used by other researchers
c. to obtain primary and secondary information of the data
d. all of the above
e. none of the above

17. The advantage of using interviews over questionnaires is that the researcher is able to

a. compel the subject to respond to all the questions
b. seek clarification on subject's answers
c. keep a record of the responses by the participants
d. limit the time in which the respondent responds to the question
e. engage in small talk to make the respondent happy

18. What is the term for a large group from which a smaller group is drawn so as to draw conclusion(s)?

a. statistic
b. variable
c. population
d. parameter
e. sample

19. What is the term for a smaller group drawn from a large group that can be used to draw conclusion(s)

a. statistic
b. variable
c. population
d. parameter
e. sample

20. Which of these is true of the ex post-facto research?

a. the independent variable can be easily manipulated
b. it is easy to differentiate the cause and effect factors
c. there is always one cause factor
d. the sample cannot be randomized
e. the findings are easy to confirm

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21. The researcher may want to replicate a research in order to promote

a. truth of the study
b. external validity of the study
c. internal validity of the study
d. relationship of the variables
e. authenticity of the participants

22. The major weakness of basic research is that it

a. uses limited sample
b. its objectives are vague
c. the subjects are animals
d. has no immediate application
e. it takes a long time to complete.

23. What is the simplest measure of variability?

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

24. The research interview has the following disadvantage(s)

a. it is not easy to determine the reliability of the method
b. the respondents need a high level of verbal skills
c. there is a chance of interviewer bias
d. data collected is not easy to analyse.
e. .all the above

25. In qualitative research the literature review

a. provides research data
b. is not an important part of the research process
c. is conducted after data collection
d. is a continuous process
e. is a major part of the research process

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26. A researchr interviewed Gogo Mabuza who is now 98 years old about her experiences as a pupil in one of the mission schools. Gogo Mabuza should be viewed as

a. primary source
b. secondary source
c. literal source
d. human source
e. unreliable source.

27. What would you term a careful, systematic and patient study in some chosen field of knowledge?

a. procedure
b. evidence
c. methodology
d. research
e. objective.

28. The mean, median and mode coincide in a distribution that is

a. bimodal
b. polymodal
c. negatively skewed
d. bell-shaped
e. positively skewed.

SECTION B

INSRUCTIONS: Answer any three questions from this section.

1. Using *four* suitable examples to support your argument, explain why tests are necessary in schools.   *(4 x 6 = 24marks)*

2. (a) Write down the formula for the degree of freedom. (2 marks)

   (b). Write down the formula for calculating the inclusive range. (5 marks).

   (c). Calculate the inclusive range of the following scores (5 marks)

   10   90   80   40   20   50   50

   (d). What is the median of the scores. (5 marks)

   (e) What is the mode of the scores? (2 marks)

   (f) What do the mode and the mean have in common? (5 marks).

                                  (Total: 24 marks)

3. Give and fully explain *four* factors that would influence you to choose an essay test over a multiple choice test when testing your pupils.   *(4 x 6 = 24 marks)*

4. Explain any *three* of the following

   a) Stratified random sampling

   b) Action research

   c) The structured interview

   d) Primary data
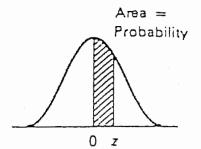
                                  (3 x 8 = 24 marks)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$31. df_t = n - 1$

$32. df_b = k - 1$

$33. df_w = n - k$

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

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

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

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

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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