UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

FINAL EXAMINATIONS 2007

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 Section B in the answer booklet.**
6. **Answer cards and formula sheets are also provided.**

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

Answer all items in this section.

1. The score which occurs more frequently in a group of scores is called a
   a. range
   b. mean
   c. variance
   d. mode
   e. median

2. What do we call measures which cannot be broken down into smaller units
   a. continuous data
   b. discontinuous data
   c. qualitative data
   d. quantitative data
   e. discrete data

3. When Nesisa told the Newspaper reporter about what her great-grandmother had told her about the arrival of the white missionaries in her village; Nesisa can be viewed as a
   a. historical source
   b. secondary source
   c. primary source
   d. valid source
   e. reliable source

4. Which of the following is derived from a population?
   a. Sample
   b. Parameter
   c. Variable
   d. Statistic
   e. Generalization

5. Which of the following scales is composed of equal units of measurements?
   a. Ordinal scale
   b. Both ordinal and nominal scales
   c. Interval scale
   d. Nominal scale
   e. None of the above

6. A researcher spends 6 months studying how a company operates. This is called a/an
   a. intensive study
   b. naturalistic observation
   c. survey
   d. case study
   e. experimental study

7. The term measurement refers to
   a. making a judgement about a variable
   b. giving a numerical value to a variable
   c. compiling data
   d. analysing data
   e. interpreting data

8. Marks can be represented and displayed graphically by
   a. pie chart
   b. bar chart
   c. histogram
   d. frequency distribution
   e. all the above

9. "They are very difficult to construct." Which test items is the statement referring to?
   a. Essay test items
   b. True/False items
   c. Multiple choice items
   d. Matching items
   e. Completion test items

10. If a test is very difficult the resulting distribution is likely to be
   a. normal
   b. negatively skewed
   c. symetrical
   d. positively skewed
   e. all the above

11. The term evaluation refers to
   a. the process of assigning scores
   b. gathering test scores
   c. all forms of assessment
   d. making judgement
   e. comparing one child with another

12. One way of helping a child to grow intellectually is
   a. to give them intellectually challenging tasks
   b. to tell them off when they perform poorly
   c. not to comment on their poor performance
   d. to punish them when they fail a test
   e. to give them regular IQ tests.

13. Two sets of scores from twenty students were found to have a correlation of 0.2. This means that the two scores are
    a. not related at all
    b. slightly positively related
    c. slightly negatively related
    d. perfectly positively related
    e. perfectly negatively related

14. A test used for testing students performance after instruction is a
    a. mastery test
    b. performance test
    c. formative test
    d. summative test
    e. diagnostic test

15. When the lowest student scores 10 and the highest scores 90, the difference between the two scores is called a
    a. mode
    b. mean
    c. median
    d. variance
    e. range

16. Which of these is the formula for calculating an inclusive range
    a. $X^L - X^h - 1$
    b. $X^h - X^L + 1$
    c. $X^h + X^L - 1$
    d. $X^h + X^l + 1$
    e. $X^h + 1 - X^L$

17. The Head of a school wanted to select the best student to offer her/him a scholarship. Which test should he/she use?
    a. an aptitude test
    b. norm referenced test
    c. criterion referenced test
    d. competency test
    e. power test

18. A famous musician wanted to offer a scholarship to a student to train to play a piano. Which test should be used to select the student?
    a. diagnostic test
    b. competency test
    c. mastery test
    d. achievement test
    e. aptitude test

19. When the distribution of test scores are positively skewed one might infer that the test was
    a. easy
    b. difficult
    c. moderate
    d. fair
    e. content valid

20. Which does not belong to this group?
    a. Water in a dam
    b. Distance between two towns
    c. Length of a river
    d. Number of boats in a lake
    e. Height of a tree

21. In a longitudinal study what is the researcher most interested in?
    a. acquisition of new skills
    b. change brought by time
    c. change in sample size
    d. change in skills acquired by the researcher
    e. change in the composition of the researcher team

22. What is the main problem associated with the mail questionnaire?
    a. It is expensive to send by post
    b. It can only be sent to a limited sample
    c. The researcher does not meet the respondents
    d. Many respondents have no idea what the research is about
    e. It has a very low response rate

23. Thulile wanted to study the behaviour of pregnant Swazi women living in rural areas towards the use of herbal medicine. Which research method should she use?
    a. survey
    b. desk study
    c. observational study
    d. ethnographic study
    e. historical study

24. Which of the following is the major reason why the survey method is often used?
    a. It requires limited skills from the researcher
    b. It opens room for further research
    c. Results can be generalised
    d. Data is easy to quantify
    e. Questionnaires are easy to construct

25. One major reason for conducting research is to
    a. dispute other researcher's findings
    b. verify other researchers' findings
    c. apply one's research skills
    d. learn new skills
    e. extend the boundaries of knowledge

26. If the distribution of scores can be divided into two equal parts from the apex, such a curve can be said to be
    a. bi-modal
    b. positively skewed
    c. negatively skewed
    d. bell shaped
    e. mesokurtic

27. Which statistical measure has an equal number of scores on either side of it
    a. median
    b. mean
    c. mode
    d. variance
    e. standard deviation

28. Living with a group of people to study their way of life is called
    a. subject observation
    b. participant observation
    c. behavioural observation
    d. natural observation
    e. community observation

29. The use of controlled environment is most characteristic of
    a. case study
    b. naturalistic observation
    c. experimentation
    d. observation research
    e. participatory observation

30. When a child is able to use a formula to solve a problem, according to Bloom's Taxonomy, this would be
    a. comprehension
    b. synthesis
    c. analysis
    d. application
    e. evaluation

31. If, a test measures student's achievement and on subsequent applications the same students continue to do well. This means that the test is
    a. acceptable
    b. reliable
    c. valid
    d. usable
    e. readable

32. At the end of the semester, Mpendulo scored 35% in the examination, scoring below everyone in his class. This is an example of
    a. norm referencing
    b. formative evaluation
    c. curriculum evaluation
    d. criterion referencing
    e. diagnostic evaluation

33. Which test items have a disadvantage of being subjective?
    a. Completion
    b. Multiple choice
    c. Matching type
    d. True-false
    e. Essay type

34. A given distribution that has two highest scores which are not close to each other is described as
    a. unimodal
    b. mesokirtic
    c. a mode
    d. bimodal
    e. a mean

35. As a follow up to her teaching a teacher gives a written exercise. This is the form of
    a. illuminative evaluation
    b. diagnostic evaluation
    c. formative evaluation
    d. summatic evaluation
    e. informal evaluation

36. A table of specification ensures that a test has
    a. content validity
    b. concurrent validity
    c. construct validity
    d. criterion related validity
    e. predictive validity

37. The following are advantages of an oral test EXCEPT
    a. a candidate can be observed as he/she responds to a question
    b. Poor language skills can be easily detected
    c. responses needing further clarification can be followed up
    d. much time is required to examine each candidate
    e. assessment and examination are done when the candidate is being examined

38. In the Taxonomy of Educational Objectives, which domain/s is/are concerned with Psychomotor Skills?
    a. cognitive and affective
    b. cognitive
    c. cognitive and psychomotor
    d. psychomotor
    e. affective

39. Which test assesses a child's potential to do well in a specific tasks?
    a. selection
    b. placement
    c. diagnostic
    d. pre-test
    e. aptitude

40. Everyone who completes the race in 10 minutes or less gets admission to the army. This is an example of
    a. Norm referencing
    b. An aptitude test
    c. Attitude test
    d. Intelligence test
    e. Criterion referencing

SECTION B

INSTRUCTIONS: Answer question one and any other two questions in the answer booklet.

1. UNESCO statistics show that one in every four teachers in sub-Saharan Africa is infected with HIV. Several classes are not attended to as the teachers are on indefinite sick leave. You are a researcher in the Ministry of Education.

   (a) Write a problem statement for the research and the hypothesis derived from the problem statement (8 marks)

   (b) Write a justification for the study (6 marks)

   (c) Explain the type of research design you would use to establish the extent of the problem. (6 marks)

   Total: 20 marks

2. Using any four suitable examples to support your answer defend the statement that classroom tests are a necessary evil in Swaziland's school system. (20 marks)

3. Write notes on

   (a) Three advantages and two disadvantages of participant observation.(10 marks)

   (b) Three problems of ex-post facto research. (10 marks)

   Total: 20 marks)

4. Argue for and against the use of essay type test or examination items in the assessment of children's learning in schools. Use six examples in your argument three examples in support and three against. (20 marks)

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

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). $s^2 = \frac{\sum x^2}{N} Or \frac{\sum x^2}{N-1}$

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

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

36. $$P = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$