

**UNIVERSITY OF SWAZILAND**

**FACULTY OF EDUCATION**

**FINAL EXAMINATIONS 2007**

**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 Section B in the answer booklet.
6. Answer cards, formula sheets and graph paper 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 by putting a circle around the correct response on the answer card provided.**

1. Which score takes account of all the scores in a distribution?
  - a. range
  - b. mean
  - c. median
  - d. mode
  - e. variance
  
2. Which research is used for solving immediate problems
  - a. basic research
  - b. experimental research
  - c. action research
  - d. historical research
  - e. applied research
  
3. What are speculations about the relationships between two or more variables called?
  - a. hypotheses
  - b. questions
  - c. statements
  - d. principles
  - e. constructs
  
4. Data which are usually whole units are termed.
  - a. continuous data
  - b. indiscrete data
  - c. variable data
  - d. discrete data
  - e. sample data
  
5. The content validity of a test can be best estimated by
  - a. carrying out an item analysis
  - b. carrying out item trials
  - c. calculating the validity coefficient
  - d. using the table of specification
  - e. calculating the reliability coefficient
  
6. The most important advantage of the objective test over essay test is that objective test items
  - a. are easy to construct
  - b. possess a higher content validity
  - c. cover a large content area
  - d. permit one to express oneself
  - e. allow those who know nothing to pass

7. A set of scores was grouped into intervals. One group was 48-54. It could be said that
  - a. the midpoint is 50
  - b. the upper class limit is 47.5
  - c. the lower limit is 54.5
  - d. the interval size is 7
  - e. all the above are true
  
8. Which of the following is the null hypothesis?
  - a. Sihle and Sipho are not the same height
  - b. Sihle is definitely shorter than Sipho
  - c. Sihle is by far taller than Sipho
  - d. Sihle is shorter than Sipho
  - e. Sihle and Sipho are about the same height
  
9. Which of the following is very useful and sets the stage for a research proposal?
  - a. literature review
  - b. the objective
  - c. the methodology
  - d. statement of the problem
  - e. the introduction
  
10. The name of the figure that results when the lower class boundaries are plotted against the scores of a given distribution is
  - a. a pie chart
  - b. a bar chart
  - c. a histogram
  - d. a frequency polygon
  - e. an ogive curve
  
11. Which is the first step to take in identifying a research topic?
  - a. work out specific questions that the research should address
  - b. identify a general area the research should focus on
  - c. define the problem
  - d. ask your supervisor to help you identify a research topic
  - e. all the above
  
12. Evaluation that comes at the end of the instructional process is called
  - a. formative evaluation
  - b. placement evaluation
  - c. product evaluation
  - d. diagnostic evaluation
  - e. summative evaluation

13. Which type of evaluation provides information about specific problems of learners?
  - a. formative evaluation
  - b. diagnostic evaluation
  - c. product evaluation
  - d. summative evaluation
  - e. placement evaluation
  
14. The affective domain relates to
  - a. interests
  - b. values
  - c. attitudes
  - d. all the above
  - e. none of the above
  
15. Reliability is about
  - a. stability of a test
  - b. accuracy of measurement of a test
  - c. consistency of test results
  - d. equivalence and stability of a test
  - e. validity of test items
  
16. The biggest advantage that the objective type of test has over the essay test is that it measures
  - a. internal consistency of the item
  - b. a more complete sampling of the content area
  - c. the discriminating power of the item
  - d. instructional objectives
  - e. higher predictive value of the item
  
17. When a student submits a dress she sewed during the school year for assessment; this is called
  - a. formal evaluation
  - b. quality evaluation
  - c. product evaluation
  - d. work evaluation
  - e. special evaluation
  
18. The only justifiable way to compare test scores is to convert them into
  - a. standard scores
  - b. deviation scores
  - c. discrete scores
  - d. continuous scores
  - e. raw scores

19. From among the following categories of cognitive domain, which is relatively simpler?
- synthesis
  - application
  - analysis
  - evaluation
  - knowledge
20. What term is used for measurement that can be broken down into smaller units using precision instruments?
- quantitative data
  - continuous data
  - discrete data
  - discontinuous data
  - qualitative data
21. When we divide a sum of values with the number of observations, the resulting value is termed
- median
  - mode
  - mean
  - range
  - mean deviation
22. Compared with a mailed questionnaire, the principal advantage of the interview is
- low cost of data collection
  - ease of administration
  - high reliability of the obtained data
  - depth of information collected
  - high rate of response
23. The process of validating a research instrument involves collecting data on the same problem using three methods and comparing findings. This method is called
- content validity
  - rival explanation
  - triangulation
  - discriminant validity
  - face validity

24. An attribute, trait or characteristic in which individuals differ among themselves is termed
- a sample
  - data
  - a scale
  - a variable
  - a case
25. Which of these is most affected by the problem of guessing?
- true-false
  - essay test
  - short answer test
  - completion test
  - matching test
26. Purposive sampling is used when the
- population is too large
  - population is too small
  - population is not easy to identify
  - researcher does not know what to do
  - the researcher wants to follow a certain theory
27. When a teacher finds that he has to ask for more money and more people to help him/her administer a test, perhaps the test is NOT
- reliable
  - flexible
  - valid
  - usable
  - sustainable
28. In a multiple choice test item, there is always is a correct statement called the
- alternative
  - key
  - stem
  - option
  - distractor

## SECTION B

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

1. Data below indicate the performance of students in a given test.

Class Interval	Frequency
86 – 90	2
81 – 85	5
76 – 80	12
71 – 75	13
66 – 70	15
61 – 65	11
56 – 60	10
51 – 55	8
46 – 50	6
41 – 45	3
36 – 40	3
30 – 35	2

- (a) What is the interval of the scores? (2 marks)
- (b) Workout the midpoints of each of the group of scores. (6 marks)
- (c) With frequencies on the vertical axis (y) and the scores the horizontal axis (x) construct a frequency polygon. (8 marks)
- (d) Describe fully the performance of the group as shown in the graph. (6 marks)
- (e) How would you describe the performance of the group; positively or negatively skewed? (2 marks)

(Total: 24 marks)

- 2(a) Explain any four disadvantages of the multiple choice test. (4 x 4 = 16 marks).

- (b) Why do teachers continue to use this type of test? Give two plausible reasons.

(4 x 2 = 8 marks)

(Total: 24 marks)

P.T.O.

3. Discuss briefly any three advantages and three disadvantages of each of the following.

(a) Norm referenced tests.

(b) Criterion referenced tests.

(12 marks each)

(Total: 24 marks)

4(i) Explain any two ways of determining the reliability of an instrument.

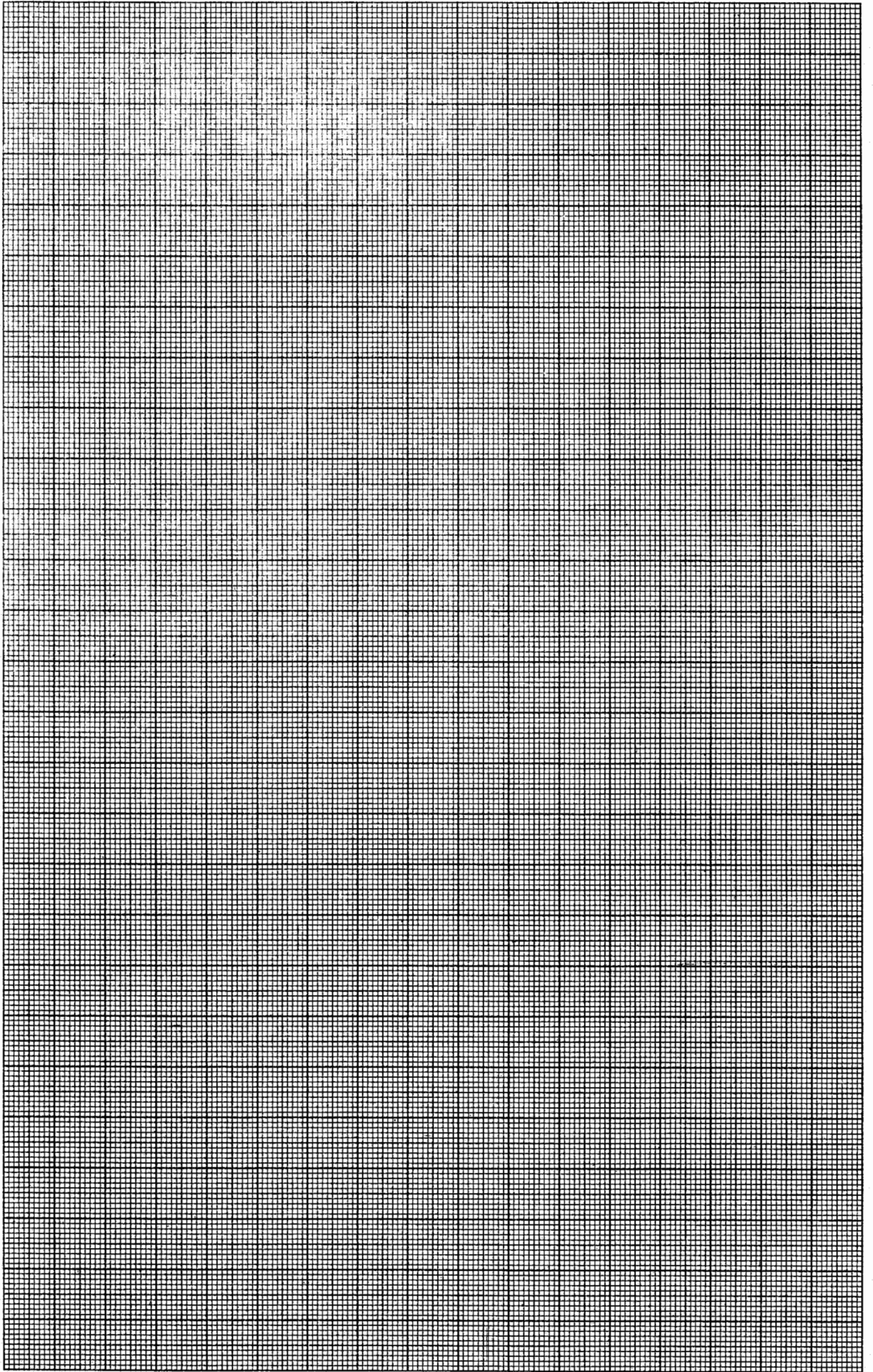
(2 x 6 = 12 marks)

(ii) Discuss any three factors that may cause the results of an instrument to be unreliable.

(3 x 4 = 12 marks)

Total: 24 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

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

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

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

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

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

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

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

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

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

$$(10) z\text{-score} = \frac{X - \bar{X}}{s}$$

$$(11) T\text{-score} = 10z + 50$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\text{WITHIN}_{ss} = \sum \sum X^2 - \frac{\sum (X)^2}{n}$$

$$31. df_1 = n - 1$$

$$32. df_b = k - 1$$

$$33. df_w = n - k$$

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

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

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

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

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