UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2006

TITLE OF PAPER	**:**	**RESEARCH METHODS**
COURSE CODE	**:**	**ST332**
TIME ALLOWED	**:**	**2 (TWO) HOURS**
REQUIRMENTS	**:**	**NONE**
INSTRUCTIONS	**:**	**ANSWER BOTH QUESTIONS IN PART ONE AND ANY THREE QUESTIONS IN PART TWO. ALL QUESTIONS CARRY EQUAL MARKS.**

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PART ONE
ANSWER BOTH QUESTIONS

QUESTION ONE. [4 x 5 = 20 marks]

For each of the following problems, three possible conclusions are given. Choose the most correct one and justify your choice:

1.1 A survey is carried out by the Electricity Board to determine the average consumption of electricity per household in Swaziland. To draw the sample, they first divided up the population of Swaziland into 16 regional divisions. Then 5 of these divisions were selected at random, and lists of households in these 5 divisions were prepared using simple random sampling, to be interviewed.

(a) This sample was drawn using cluster sampling.
(b) This sample was drawn using simple random sampling.
(c) This sample was drawn using stratified random sampling.

1.2 A researcher collected personality scores from a sample of 100 students and organized the scores in a grouped frequency table. That evening the researcher took a copy of that table home in order to use a home computer to do more detailed calculations. However, the researcher soon found that the table did not provide enough information

(a) to find the total scores of the100 students.
(b) to estimate the mean score.
(c) both (a) and (b).

1.3 A box contains 250 arbitrarily numbered tickets at random order. Two people want to estimate the average of the numbers in the box. They agree to take a sample of 10 tickets, and use the sample average as their estimates. Person A wants to draw the tickets at random without replacement and person B wants to draw a set of 10 tickets at one time from the box.

(a) Person A will get a more accurate estimate.
(b) Person B will get a more accurate estimate.
(c) Both will get an estimate with the same accuracy.

1.4 A number of customers of a commercial bank complain that they have to wait for a long time before getting served. The bank asked a consultant to investigate this complaint and submit a report within a month. A survey is carried out by the consultant to determine the average waiting time of a customer using a simple random sample. The consultant found that the estimated average waiting time of a customer before getting served is about 2.79 minutes. Based on the above estimate, the bank should

(a) increase the number of tellers.
(b) decrease the number of tellers.
(c) do neither (a) nor (b).

1.5 A study was conducted in the Netherlands in 1968, to relate the intelligence of 18-year-old men to the number of their brothers and sisters. In the Netherlands, all men take a military pre-induction exam at age 18. The exam includes an intelligence test known as "Raven's progressive matrices," and includes some demographic questions about the members of the family. The study related scores on the intelligence test to the total number of brothers and sisters. The records of all the exams taken in 1968 were used. From this study, we can conclude that

(a) the findings of the study are not good, because the sample size was not mentioned.
(b) the findings of the study are not acceptable, because the study did not use any representative or random sample.
(c) the study produced the perfect results of the relationships.

QUESTION TWO. [8 + 4 + 4 + 4 marks]

Suppose you want to estimate the proportion of students in UNISWA who watch local TV news. You know that the registrar keeps only an alphabetical list of students for each faculty. Assume that there are 5620 students enrolled in the current academic year. You propose to choose at random a number from 1 to 20, count that far down the list, taking that name and every 20th name after it for the sample. Your friend proposes to select randomly 3 faculties and select 50 students randomly from each selected faculty. Assume that your proposed sampling method is Method A and that of your friend is Method B. Based on the above facts, answer the following questions:

2.1 State the following for the above study:

(a) Population and its size.
(b) Parameter and Statistic.
(c) Sample sizes.
(d) Sampling methods.

2.2 (a) State the sampling frame of the above survey.
(b) Which sampling method would not be possible to draw using the above sampling frame? Explain why or why not?

2.3 (a) Are both methods probability sampling? If not, which one is not probability sampling?
(b) Which method will provide you with a better estimate? Explain.

2.4 If the university keeps only one alphabetic list of students, which of the two sampling methods will you choose? Why?

PART TWO
ANSWER ANY THREE QUESTIONS

QUESTION THREE. [12 + 8 marks]

3.1 State three basic probability sampling techniques and three basic non-probability sampling techniques. Briefly, discuss the main advantages and disadvantages of those probability sampling over those non-probability sampling techniques.

3.2 List all the important components, in proper sequences, of writing a research proposal.

QUESTION FOUR. [12 + 8 marks]

4.1 The first question most students ask is "how do I find a research problem"? There are three important sources of problems: experience, deductions from theory and related literature. Discuss how these three sources help you to find a research problem.

4.2 Suppose you want to conduct a survey among students of your university about their awareness of water pollution in Swaziland. Give a title for the above study and describe all the steps involved in selecting the sample.

QUESTION FIVE. [12 + 8 marks]

5.1 Compare the methods of personal interviews and telephone interviews in data collection in terms of their advantages and disadvantages.

5.2 Briefly, give an outline of procedures in questionnaire research.

QUESTION SIX. [12 + 8 marks]

6.1 Discuss the four criteria used in evaluating the significance of the selected research problem.

6.2 The completion of survey research involves five different steps. Discuss those steps.

QUESTION SEVEN. [20 marks]

Discuss the differences and/or the similarities between the following pairs of terms:

7.1 Purpose of the Study and Objective of the Study.
7.2 Sample Survey of Tangibles and Sample Survey of Intangibles
7.3 Research Report and Research Proposal.
7.4 Results of the Study and Conclusions of the Study.
7.5 Data Collection and Data Organization.