UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2005

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

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PART I
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   Suppose you as a student want to conduct a survey among students of your university about their opinion on improving the existing Education System. You know that the university authority does not allow students to use its list of enrolled students in any academic year. Hence, you consulted two experts for the advice on how to select a sample of students. First expert suggested selecting 300 students using simple random sample and the second expert advised to draw 300 students at random without replacement. Which advice will you follow so that you can have better results?

   (a)   Advice of first expert.
   (b)   Advice of second expert.
   (c)   None.

1.2   In one study, the Educational Council needed a representative sample of school students. To draw the sample, they first divided up the population of all schools into four regional groups. Then, they randomly selected two schools from each group. That created a sample of 8 schools. Each school in the sample was then asked to pick a sample of 100 students using a stratified random sampling method.

   (a)   This sample was drawn using stratified random sampling.
   (b)   This sample was drawn using multi-stage probability sampling.
   (c)   This sample was drawn using multi-stage non-probability sampling.

1.3   A survey is carried out by the Electricity Board to determine the average consumption of electricity per household in Manzini. The Board draws a simple random sample of 1,000 households; but after several visits at different times, the interviewers find people at home in only 741 of the sample households. Rather than face such a high non-response rate, the Electricity Board draws a second batch of 259 households to reduce the non-response rate, and attempts to find as many as possible to reach close to its planned strength of 1,000 households. They computed total consumption of E231,087.00 in 900 interviewed households, and estimated the average consumption in Manzini to be about E256.76 per household. This estimate is likely to be

   (a)   too low.
   (b)   too high.
   (c)   about right.

1.4   The percentage of students in the Faculty of Social Science who are aware of the problem of environmental pollution is unknown. In order to estimate that percentage, a random sample of 200 students was selected from all 759 social science students; it turned out that 159 students are not aware of the problem of environmental pollution. Therefore, we know that

       (a)   20.5% is the value of the parameter.
       (b)   79.5% is the value of the statistic.
       (c)   none of the above is correct.

1.5   A researcher found a correlation coefficient of − 0.42 between 'rank in high school class' and 'achievement in university' for a sample of 1500 Year-I university students. Assume that the best student in the class has a rank of 1, the second best has rank 2, and so on. With this result, the researcher concluded that

       (a)   the researcher made an error in computing the correlation coefficient.
       (b)   those students with a low numerical ranking would tend to have high achievement in the university.
       (c)   these two variables are not suitable for computing a correlation coefficient.

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

Suppose you want to estimate the average IQ of students in UNISWA. You want to organize a written IQ examination for a group of randomly selected students. You know that the university keeps only alphabetical lists of the students within each faculty. Assume that there are 4897 students in the current academic year. You propose to choose a sample of 250 students randomly without replacement. Your friend proposes to select randomly 3 faculties and select 80 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   State the sampling frame of the above survey. Is it possible to draw a sample in each of those two methods using the above sampling frame? Explain why or why not?

2.3   Are both methods probability sampling? Which method will provide you better estimate? Explain.

2.4   Suppose the university only keeps one alphabetic list of all students of UNISWA. Which of the two sampling methods will you choose? Why?

PART II
ANSWER ANY THREE QUESTIONS

QUESTION THREE.   [12 + 8 marks]

3.1   Discuss the importance of reviewing previous research in the formulation of a new research problem.

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

QUESTION FOUR.   [12 + 8 marks]

4.1   Suppose you want to conduct a survey among students of your university about their awareness of the food crisis in Africa. Give a title for the above study and describe the procedures involved in selecting the sample.

4.2   List all important components, in proper sequences, of writing a research report.

QUESTION FIVE.   [12 + 8 marks]

5.1   Discuss different modes of data collection in terms of their advantages and disadvantages. At the end, make a summary table for comparison of those modes you discussed.

5.2   Discuss the main advantages and disadvantages of probability sampling over non-probability sampling.

QUESTION SIX.   [12 + 8 marks]

6.1   You know that the role of the measurement scales is very important when applying the various analysing techniques. Assume that you finished the data collection job of your Research Project which includes the data of all the four types of measurement scale. Discuss the use of various appropriate graphs and tables to present the data for your Project.

6.2   Discuss various procedures of analysing data for measuring relationships between two or more variables.

QUESTION SEVEN.   [20 marks]

Discuss the differences between the following pairs of terms:

7.1   Statement of the Problem and Objective of the Study.
7.2   Survey and Census
7.3   Research Report and Research Proposal.
7.4   Conclusions of the Study and Recommendations of the Study.