UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2015

TITLE OF PAPER	:	RESEARCH METHODS
COURSE CODE	:	ST332
TIME ALLOWED	:	2 (TWO) HOURS
REQUIRMENTS	:	NONE
INSTRUCTIONS	:	ANSWER <u>BOTH</u> QUESTIONS IN PART A AND ANY <u>THREE</u> QUESTIONS IN PART B. 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   A factory manager is concerned about the daily number of absentees. A system of monitoring attendance is introduced and thereafter the number of absentees is recorded every day. Finding that the number of absentees is low, the manger concludes that the monitoring system is a success.

     (a)   The manager's conclusion is not acceptable, because the manager did not use any kind of random sampling.
     (b)   The manager's conclusion is not justified, because he ignored the absentee rate of the period before the monitoring system was introduced.
     (c)   The manager's conclusion is correct.

1.2   A study was conducted by a student body of the Faculty of Social Science to determine the gender equality (male-female ratio) of the students admitted only for this year. It is known that all first year students in the faculty take computer foundation course. Therefore, the student body decided as per their convenience to conduct the study with all students registered in the computer foundation course, and uses a questionnaire which includes questions about the gender and whether they are taking the course for the first time or repeating. About 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 uses a convenience sampling.
     (c)   the study produced the perfect results of the ratio.

1.3   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 879 social science students; it turned out the 159 students are aware of the problem of environmental pollution. Therefore, we know that

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

1.4   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 12 regional divisions. Then 4 of these divisions were selected using simple random sampling and lists of all households in these 4 divisions were prepared to be interviewed.

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

1.5 A researcher is studying the relationship between the two variables; the "age of the students" and their "performance at the year-end examination". Assume that the performances are measured by the average marks of all the courses taken at the year-end examination. The researcher found a correlation coefficient of − 0.87 between these two variables. With this result, the researcher concluded that

(a) he made an error in computing correlation coefficient.

(b) the younger students would tend to have higher average marks at the year-end examination.

(c) these two variables are not suitable for computing a correlation coefficient.

QUESTION TWO.   [10 + 6 + 2 + 2 marks]

Suppose that a researcher would like to investigate the literacy status of orphans aged below 16 years in the commercial city, using a probability sampling. The main purpose of the study is to estimate the proportion of orphans completed primary school. The researcher originally decided to select a random sample 100 orphans aged below 16 years using a simple random sample; but suddenly she changed her decision and opted to use a complex probability sampling. Therefore, the researcher chooses two townships using a simple random sampling from all existing townships as per the municipal council definition. From each of the two townships selected, she obtains a list of "blocks", a smaller unit in terms of geographical area. She uses again simple random sampling to select 10 blocks from each selected townships.

At block level, the researcher compiles, with the help of some local residences, a list of all orphans under sixteen years of age living in each of those selected blocks. She decided to select all orphans from each blocks. Based on the above facts, answer the following questions:

2.1 State the following for the above study:
(a) What is the population in this study and state the size of the population (if known)?
(b) Which complex sampling method was used in this study?
(c) What is the parameter (if any) in this study and state its value (if known)?
(d) What is the statistic (if any) in this study and state its value (if known)?
(e) What is the size of the sample in this study (if known)? Explain if unknown.

2.2 State the sampling frame(s) used in the above survey in each stage of the survey.

2.3 State the main reason(s) for opting to use the complex sampling method instead of the simple random sample.

2.4 If you were given the responsibility to conduct this study; would you do it differently? Explain why or why not.

PART II
ANSWER ANY THREE QUESTIONS

QUESTION THREE.   [10 + 10 marks]

3.1   Name two important probability sampling techniques. Discuss, with examples, how one can use these two techniques in selecting sample from your university student population.

3.2   Discuss the advantages and disadvantages of using non-probability sampling techniques in social science research.

QUESTION FOUR.   [10 + 10 marks]

4.1   State and discuss the different component of research report.

4.2   Discuss the different principles of interpretation of the results after the data analysis job finished.

QUESTION FIVE.   [10 + 10 marks]

5.1   Name a research topic for your project. Use the evaluating criteria to find out whether your selected study is a researchable topic.

5.2   Discuss the role of proper and suitable methodology to conduct a study.

QUESTION SIX.   [10 + 10 marks]

6.1   Compare Personal Interviews mode and Telephone Interviews mode of data collection with respect to advantages and disadvantages.

6.2   Suppose you want to conduct a survey using non-probability sampling from students of your university as subjects. Outline two separate sampling plans to draw a sample of 100 students by those two sampling techniques. Explain which of those two techniques would be most suitable in your case.

QUESTION SEVEN.   [20 marks]

Compare the following pairs of terms:
7.1   Data Processing and Data Analysis.
7.2   Findings of the Study and Conclusions of the Study.
7.3   Cluster Sampling and Stratified Sampling.
7.4   Objective of the Study and Motivation of the Study.
7.5   Population and Sample.