



**STRATHMORE UNIVERSITY**  
**INSTITUTE OF MATHEMATICAL SCIENCES**  
**END OF SEMESTER EXAMS**  
**COURSE CODE: STA 8104**

**COURSE NAME: SURVEY DESIGN AND ANALYSIS**

DATE: 19th DECEMBER, 2018.      TIME: 2 HOURS 30 MINUTES

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**INSTRUCTIONS.**

Answer question ONE and any other THREE questions.

**Question 1 (Compulsory).**

a) Why should researchers care about non responses during surveys?

**[4 Marks]**

b) Explain any two factors that you would consider when evaluating a sample? **[4 Marks]**

c) Give the distinction between the following terms used in survey design?

i) sampling error and sample frame

**[4 Marks]**

ii) Unit and item nonresponse? [4 Marks]

d) Explain how non contact between respondent and interviewer can be a source of error in survey analysis? [4 Marks]

e) Explain how Form and Content of a question are important in survey data collection [5 Marks]

### **Question 2.**

a) What is a special purpose survey? [3 Marks]

b) Explain three components that constitute a good survey? [6 Marks]

c) Outline two types of inferences that are required in the process of producing statistics about a target population. [4 Marks]

d) Suppose you are in charge of a team planning to sample pupils from Nairobi county. Assume there are 20000 students in Nairobi county and these students go to 40 schools. You are required to select a sample of 2000 which is 1/10 of the pupil population. Explain any two ways in which you would select this sample to maintain the probability of selection for each pupil sampled? [2 marks]

### **Question 3**

a) The response rate is a basic parameter for evaluating a data collection effort. With regard to personal interview, explain how response rate is calculated? [4 Marks]

b) What biases are associated with non response? [7 Marks]

c) Propose two ways of reducing non response in surveys? [4 Marks]

#### Question 4

a) Explain six critical considerations to make when selecting a data collection mode? **[7 Marks]**

b) What are the potential advantages and disadvantages of internet based surveys? **[4 Marks]**

c) Consider a one-stage sample in which clusters (schools) are selected by simple random sampling from **A** clusters (schools) in the population (all the schools in a county), and then all **B** elements (pupils) are taken in each selected cluster (school) (assume each cluster (school) is the same size). How does the variance of the sample mean vary with

i) an increase in cluster means? **[2 Marks]**

ii) an increase in the number of clusters? **[2 Marks]**

#### Question 5

a) Explain the steps for designing and evaluating good survey instruments? **[6 Marks]**

b) What are the three essential components of developing a survey instrument? **[3 Marks]**

c) What are weights and how would you use weights in survey data analysis? **[6 Marks]**