TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MATHEMATICS AND PHYSICS

UNIVERSITY EXAMINATION FOR:

MASTER OF SCIENCE IN APPLIED STATISTICS

AMA 5107 : DESIGN AND ANALYSIS OF SAMPLE SURVEYS PAPER 1

END OF SEMESTER EXAMINATION

SERIES: 2015/2016

TIME: TWO HOURS

DATE: APRIL 2016

Instructions to Candidates
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of five questions. Attempt ONE and any other two questions.
Do not write on the question paper.

Question ONE (3o Marks)

a) Briefly explain six principal steps in a sample survey.   (3marks)

b) A sampling frame is subject to several types of defects. Broadly classify these defects into four classes.

(4 marks)

c) Explain briefly four principles that should be followed in stratifying a population.   (4 marks)

d) A regional council wishes to assess the amount of hazardous waste produced by the 6231 manufacturing companies in its area. They are split into three strata:
> (1) basic metal industries;
> (2) food, textiles and mineral products;
> (3) other manufacturing.

A simple random sample of companies was taken in each stratum, and for each company the total quantity of hazardous waste (in thousands of tonnes) produced in 2003 was measured.

Question TWO

Question THREE

Question FOUR

Question FIVE