



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND YEAR FIRST SEMESTER EXAMINATION FOR DEGREE
OF BACHELOR OF ARTS IN ECONOMICS BACHELOR OF
SCIENCE IN MATHEMATICS AND ECONOMICS AND
BACHELOR OF BUSINESS AND ECONOMIS WITH
INFORMATION TECHNOLOGY

MAIN CAMPUS

AEC 202: ECONOMICS STATISTICS I

Date: 3rd December, 2016

Time: 8.30 - 11.30am

INSTRUCTIONS:

- Answer Question ONE (Compulsory) and any other TWO.
- Marks will be awarded to students who demonstrate accuracy and clarity of presentations
- Calculators are allowed in the examination room.

ISO 9001:2008 CERTIFIED



QUESTION ONE (COMPULSORY)

- a) Define the following terms;
- Population (2 marks)
 - Primary data (2 marks)
 - Sample space (2 marks)
 - Set difference (2 marks)
- b) The sales director of a large organization requires all members of sales staff to attend a team-building event at an outward-bound centre.
- What are the chances that a team of three includes zero, one and three females? (5 marks)
 - Calculate the mean and standard deviation of the probability distribution. (7 marks)
- c) Given the universal set $T = \{0, b, d, f, h, j, l\}$ and the following subsets of T , $A = \{d, h\}$, $B = \{j, b, 0\}$ and $C = \{0\}$. Illustrate $B \cap C$ and $A \cap B \cap C$ using well drawn Venn diagrams. (10 marks)

QUESTION TWO

- a) Explain the four levels of data measurement. (8 marks)
- b) The number of e-mail messages sent by 22 office workers are; 50, 14, 25, 8, 10, 33, 52, 12, 45, 15, 7, 5, 98, 13, 31, 52, 6, 75, 17, 22, 12 and 16.
- Compute mean, mode and median (6 marks)
 - Compute variance and standard deviation (6 marks)

QUESTION THREE

- a) Write short notes on the following;
- Classical probability (2 marks)
 - Binomial probability distribution (2 marks)
 - Simple random sampling (2 marks)
 - Mutually exclusive events (2 marks)
- b) Provide a comparison for mean, median and mode. (6 marks)
- c) Given that $P(A \cap B) = P(A) \times P(B/A)$, show that $P(A/B) = \frac{P(A \cap B)}{P(B)}$ hint Bayes theorem. (6 marks)

QUESTION FOUR

- a) Discuss any four characteristics of Poisson distribution (8 marks)
- b) What is the importance of studying statistics? (4 marks)
- c) Discuss any four ways of presenting data (8 marks)

QUESTION FIVE

- a) Distinguish between types of data and types of statistics. (10 marks)
- b) Jambo jet operates commuter flights using aircraft that can take ten passengers. During each flight passengers are given a hot drink and a 'Snack Pack' that contains a ham sandwich and a cake. The company is aware that some of their passengers may be vegetarians and therefore every flight is stocked with one vegetarian Snack Pack that contains a cheese sandwich in addition to ten that contain ham. If 10 per cent of the population are vegetarians, what is the probability that on a fully booked flight there will be at least one vegetarian passenger who will be dissatisfied with their Snack Pack?

(10 marks)