Machakos University College

(A Constituent College of Kenyatta University)
UNIVERSITY EXAMINATIONS 2013/2014
SCHOOL OF HOSPITALITY AND TOURISM MANAGEMENT
SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
IN COMPUTER SCIENCE
HTM: INTRODUCTION TO STATISTICS IN HOSPITALITY TOURISM
MANAGEMENT

DATE: **TIME:** 8.30 a.m. – 10.30 a.m.

INSTRUCTIONS:

*Answer question **ONE** which is Compulsory and any other **TWO** questions*

QUESTION ONE

  (a) (i) Explain the meaning of the following terms as used in statistics
        (i)   Population
        (ii)   Sample
        (iii)   Variable   (6 marks)
    (ii)   Differentiate between each of the following terms
        (i)   Categorical and numerical data
        (ii)   Discrete and continuous variable   (4 marks)

  (b) (i)   The table below shows marks scored by students in a statistic examination

Marks	30-34	35-39	40-44	45-49	50-54	55-59	60-64
No. of Students	3	6	5	12	8	9	7

Using an assumed mean of 47, determine;
(i)   The mean   (4 marks)
(ii)   The standard deviation   (3 marks)

(ii) Define the following terms as used in statistics (i)   Fractile

(ii) Range   (4 marks)

(c) Two true six-sided dice are rolled.

(i)   What is the probability of a total score of 10.   (5 marks)

(ii)   What is the probability that at least one dice shows a   b   (4 marks)

QUESTION TWO

(a) The analysis of a Hotel's order gave the following values of orders received, values being recorded to the nearest £.

47	80	43	52	45	54	52	69
56	82	55	48	56	59	58	68
64	81	60	58	62	62	62	72
67	83	66	61	66	69	69	60
72	86	70	67	71	74	73	63
77	89	75	72	76	79	78	68

(i)   Tabulate the data into the form of a frequency table using intervals of £ 5.

(10 marks)

(ii)   Use the table in a(i) above to estimate the quartile deviation.   (10 marks)

QUESTION THREE

(a) Explain the meaning of the following sampling techniques
   (i)   Stratified sampling
   (ii)   Systematic sampling
   (iii)   Cluster sampling
   (iv)   Quota sampling   (8 marks)

(b) Given the following data

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	15	33	65	76	69	49	35

Calculate:

   (i)   Median
   (ii)   Mode
   (iii) 66th percentile   (12 marks)

QUESTION FOUR

(a) Explain the meaning of the following terms as applied in probability theory.
  (i)   An event
  (ii)   Random experiment
  (iii) Mutually exclusive events
  (iv)   Dependent events   (8 marks)

(b) 100 employees of a Tour Company were questioned on whether they drink alcohol or not. There were equal numbers of males and females. Half of the males drink alcohol and 40% of the females take alcohol. Determine the probability that if one of the employees was chosen at random.
  (i)   The person was an alcoholic   (3 marks)
  (ii)   The person was female.   (3 marks)
  (iii) The person was a female that took alcohol   (3 marks)
  (iv)   The person was a female given that the person selected was an alcoholic.

  (3 marks)

QUESTION FIVE

(a) (i) State any FIVE properties of the normal distribution curve.   (5 marks)

  (ii) The mean and variance for the marks in a statistics examinations are 55 and 25 respectively. Determine proportion of students who score 70 and above.   (5 marks)

(b) The mean weight of a consignment of 500 sacks of sugar is 151kg and the standard deviation of 15kg. Assuming that the weight are normally distributed, find how many sacks weigh:
  (i)   Between 120 and 155kg   (4 marks)
  (ii)   More than 185kg   (3 marks)
  (iii) Less than 128kg   (3 marks)