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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2016/2017 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE (MATHEMATICS)

Date:
Time: 9.00am –

KBA 203 – STATISTICS FOR MANAGEMENT

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

a) Distinguish between discrete and continuous variable. Give examples.

(4 Marks)

b) Find the mean and standard deviation for the set of ungrouped data.
9, 12, 7, 15, 10, 11, 9, 8, 10, 13, 12, 9

(4 Marks)

c) For the following frequency distribution;

Profit per quater,x	8	9	10	11	12	13	14	15
P(x)	k	0.15	0.15	0.25	2k	0.1	0	0.05

i) Find the missing probabilities.

(2 Marks)

ii) Calculate the expected profit and its standard deviation.

(6 Marks)

d) Construct the chain index number for the following data;

Year	Price (sh)
1991	120
1992	125
1993	140
1994	150
1995	135
1996	160

(6 Marks)

e) Calculate the coefficient of mean deviation for the following;
43, 75, 48, 39, 51, 47, 50, 47

(4 Marks)

f) Find the median of the following data;

Marks	0 -9	0 - 19	20- 29	30 -39	40 - 49	50 - 59	60 -69	70 -79
Students	2	18	30	45	35	20	6	3

(4 Marks)

QUESTION TWO (20 MARKS)

The following is the record of marks obtained by candidates in an examination.

84	91	58	44	87	76	43	83	40	54
46	55	43	76	94	65	74	50	65	61
63	59	47	37	11	82	40	27	84	45
67	58	76	16	37	74	46	50	18	86
39	78	23	71	62	22	41	38	27	72
86	57	59	57	62	77	73	35	45	39

a) Represent this data in a frequency distribution using class.

(3 Marks)

b) Calculate the;

i) Mean marks obtained by the candidates

(3 Marks)

ii) Standard deviation

(4 Marks)

iii) Median

(3 Marks)

iv) The range of middle 80% candidates marks lies.

(4 Marks)

v) Mode

(3 Marks)

QUESTION THREE (20 MARKS)

a) Discuss the significance of index numbers.

(4 Marks)

b) Compute the index number of Paasche's for the following data.

Commodity	2001		2010	
	Price	Quantity	Price	Quantity
A	7	70	5	46
B	5	27	7	28
C	10	35	9	29
D	9	50	4	42
E	3	16	10	25

(6 Marks)

c) From the prices of share X and Y given below, state which share is more stable in value?

X	55	54	52	53	56	58	52	50	51	49
Y	108	107	105	105	106	107	104	103	104	101

(10 Marks)

QUESTION FOUR (20 MARKS)

a) Define the following terms;

i) Independent events

(2 Marks)

ii) Mutually exclusive events

(2 Marks)

b) A haulage contractor has 3 type A, 2 type B and 7 type C lorries available for deliveries, all of which are used equally frequently. What is the probability that a lorry delivering a load will be;

i) Of type B

(2 Marks)

ii) Not of type C

(2 Marks)

iii) Of type A or C

(2 Marks)

c) Find the coefficient of correlation between traffic density and accident rate for the following data and give the interpretation.

Traffic Density	30	35	40	45	50	60	70	80	90
Accident Rate	2	4	5	5	8	15	24	30	32

(10 Marks)

QUESTION FIVE (20 MARKS)

a) The weight of metal component produced by a machine are distributed normally wit mean 14 Ibs and standard deviation 0.12 Ibs. What is the probability that a component sampled randomly from the production will have a weight;

i) Greater than 14.3 Ibs

(3 Marks)

ii) Less than 13.7 Ibs

(3 Marks)

iii) The weight that 20% of the components produced weight higher than.

(4 Marks)

b) The figures show the output (in thousands of tons) and the expenditure on energy for a firm over ten monthly periods.

Output(x)	20	22	25	26	21	23	28	20	25	29
Expenditure (y)	106	138	158	172	120	142	184	102	164	192

i) Find the equation of the regression line

(8 Marks)

ii) Estimate the energy expenditure if the following month's output is planned at 27000 tons.

(2 Marks)