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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2019/2020 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR
BUSINESS ADMINISTRATION

Date: 7th August, 2019
Time: 2.00 – 4.00pm

KBA 203 - STATISTICS FOR MANAGEMENT

INSTRUCTIONS
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

a) Distinguish between the following:
   i. Census and sample inquiry. (2 Marks)
   ii. Qualitative and quantitative data. (2 Marks)

b) Calculate the mean and standard deviation of the following data: 23, 43, 32, 42, 57, 62, 99, 82, 98, 54. (5 Marks)

c) The weekly demand, n, for some perishable product is shown below.

No. of order n	5	6	7	8	9	10	11
P(n)	t	4t	0.12	0.17	0.24	0.14	0.08

Determine:
   i. The missing probabilities. (2 Marks)
   ii. The probability that the demand is not more than 9. (2 Marks)
   iii. The expected number of orders and standard deviation. (5 Marks)

d) Discuss the significance of tabulation as a method of data presentation. (4 marks)

e) Given below are profits earned by franchise branches of a food outlet.

profit	5 - 9	10 - 14	15 - 19	20 - 24	25 – 29	30 - 34	35 - 39
No. of shops	8	18	27	21	10	28	8

Calculate the mode. (3 Marks)

f) A bag contains 20 balls marked 1 to 20. One ball is drawn at random. What is the probability that it is marked with a number:
   i.   Multiple 5 or 7.   (3 Marks)
   ii.   Even number.   (2 Marks)

QUESTION TWO (20 MARKS)

a)   The prices of a particular commodity in two cities is given below. From the data find the city which had more stable prices.   (7 Marks)

Prices in city A	20	22	19	23	18
Prices in city B	13	14	16	12	15

b)   Wildlife biologists have determined that the tail of dwarf pygmy wombats on the game reserve is normally distributed with mean of 42cm and standard deviation of 5cm.
   i.   What percentage of dwarf pygmy wombat has tails that are 45cm long or shorter?
                                                                              (4 Marks)
   ii.   What percentage of dwarf pygmy wombat has tails that are 54cm long or longer?
                                                                              (4 Marks)
   iii. What tail length would put a wombat in the top 13% of the distribution?
                                                                              (5 Marks)

QUESTION THREE (20 MARKS)

The following table gives the monthly income in thousand shillings in a certain organization.

54	47	48	56	49	53	65	66	57
56	52	65	68	75	63	62	56	68
65	76	61	45	65	43	64	47	79
53	67	57	54	47	73	58	76	78
46	55	74	66	40	43	61	63	58
64	73	54	56	73	44	59	49	65

   i.   Construct frequency distribution table for the following data using class intervals of 5 starting from 40.   (3 Marks)
   ii. Find the mean of the distribution.   (3 Marks)
   iii. Find the standard deviation and variance.   (5 Marks)
   iv. Find the median.   (3 Marks)
   v.   Find the inter-quartile range.   (6 Marks)

QUESTION FOUR (20 MARKS)

a) The following data relates to the prices and quantities of commodities in the year 2001 and 2005. From the data below, construct the price index for 2005 taking 2001 as the base year using the Fisher's ideal index number method.

(6 Marks)

Commodity	2001		2005	
	Price	quantity	price	quantity
A	65	20	135	30
B	95	8	160	3
C	150	5	320	8

b) A study showed that a typical adult Kenyan consumes an average of 18 gallons of soda per year with standard deviation of 3 gallons. A random sample of 64 college students showed they consumed an average of 17 gallons of soda last year. At 5%, can we conclude that there is a significance difference between the mean consumption rate of college students and adults?

(7 Marks)

c) Five friends are interviewing for jobs in a company. They each have a 65% chance of getting a job offer from the firm. Assuming the outcome for each individual is independent from the others what is the probability that:
   i.   Exactly 3 get a job offer.   (2 Marks)
   ii. At least one of them gets a job offer.   (2 Marks)
   iii. Average and standard deviation.   (3 Marks)

QUESTION FIVE (20 MARKS)

a) Distinguish the terms correlation and regression.   (5 Marks)

b) The following table gives the price and supply of a commodity in a market.

Price x	11	12	13	14	16	17	18	20
Supply (y)	30	29	29	25	24	24	21	15

   i.   Find the regression equation relating price and supply and thus use it to estimate the supply when the price is 15.   (8 Marks)
   ii. Calculate the Karl Pearson's coefficient of correlation and coefficient of determination and interpret the value.   (7 Marks)