PAN AFRICA CHRISTIAN UNIVERSITY

SCHOOL OF LEADERSHIP, BUSINESS & TECHNOLOGY

END OF SEMESTER EXAMINATION FOR THE DEGREE OF

BACHELOR OF COMMERCE

SEPTEMBER-DECEMBER 2019

CAMPUS: ROYSAMBU

DEPARTMENT: BUSINESS STUDIES

COURSE CODE: BCM204

COURSE TITLE: BUSINESS STATISTICS II

EXAM DATE: WEDNESDAY 4th DECEMBER 2019

DURATION: 2 HOURS

TIME: 9:00AM-11:00AM

INSTRUCTIONS

- Read the instructions and questions carefully before you write the answers.
- Write your **STUDENT NUMBER** in the Answer Booklet given
- *Write clearly and legibly.*
- This exam script consists of **Six (6)** questions.
- Answer question **ONE** and ANY other **three** Questions.
- *ALL PAC University's examination rules and regulations apply*

QUESTION ONE: COMPULSORY

a) Distinguish between the following terms:
   i) Skewedness and Kurtosis (4 Marks)
   ii) Coefficient of determination and correlation coefficient (4 Marks)
   iii) One - tailed and two-tailed test (4 Marks)
   iv) Type I error and Type II error (4 Marks)

b) The following production information has been provided:

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Production (In Millions)	20	22	24	21	29	25	23	26	10	28

c) Compute a 3-year moving averages (trend values) (10Marks)
d) Plot on a graph the trend values computed in (a) above (4Marks)

QUESTION TWO

The production manager for a small manufacturing firm wishes to estimate the functional relationship between the amount of labour input and output. For a given size of plant, the following data was obtained:-

Output (Q)	15	13	10	10	12	15	11	14	16	9
Labour (L)	10	6	2	1	4	8	2	6	10	1

Where the output is in thousands of units and labour is in hundreds of labour hours.

Required:

a) Estimate the production function and interpret (6 Marks)
b) Compute the coefficient of determination and interpret its value (3 Marks)
c) Estimate the output given that 750 labour hours are used (1 Marks)

QUESTION THREE

Twice a week, Kipe Hotel must make a decision on the number of tinned fresh pineapple juices it must order. It is known that one tin of pineapple juice costs ksh65. More data is provided as follows:

Selling Price (Sh)		150	160	170
Condition	Probability	Expected demand	Expected demand	Expected demand
Too hot	0.6	5000	3500	2000
Moderately	0.3	4000	2600	1200
Too cold	0.1	3000	1800	900

Required:
Advise the management on the best price to set on the basis of:

a) Mini-Max decision criterion (6 Marks)
b) EMV decision criterion (4 Marks)

QUESTION FOUR

Boys of a certain age are known to have a mean weight of μ = 65 Kilograms. A complaint is made that the boys living in a municipal children's home are underfed. As one bit of evidence, a sample of 35 boys of the same age are weighed and found to have a mean weight of $\bar{x}$ = 60.94 Kilograms. It is known that the population standard deviation σ is 11.6 Kilograms. Formulate a null hypothesis and test it. (Use 5% level of significant) (10Marks)

QUESTION FIVE

a) In a math class of 30 students, 17 are boys and 13 are girls. On a unit test, 4 boys and 5 girls made grade A. If a student is chosen at random from the class, what is the probability of choosing a girl or an A student? (3Marks)
b) An urn contains 6 red marbles and 4 black marbles. Two marbles are drawn *without replacement* from the urn. What is the probability that both marbles are black? (3Marks)
c) A box contains 4 chocobars and 4 ice creams. Tom eats 3 of them, by randomly choosing. What is the probability of choosing 2 chocobars and 1 icecream? (4Marks)

QUESTION SIX

a) Highlight any four features of a normal distribution (4 Marks)
b) Discuss three ways in which time series is important in business (6 Marks)