CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS
RESIT/SPECIAL EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE

BCOM 365: BUSINESS STATISTICS II

STREAMS:Y3S2 **TIME: 2 HOURS**

DAY/DATE: THURSDAY 26/07/2018 **11.30 A.M – 1.30 P.M**

INSTRUCTION:

- **Answer question one and two questions**

1. (a) Explain five assumptions of linear bivariance regression model. [5marks]

(b) The following data show the experience of machine operators and their performance ratings as given by the number of good parts turned out per 100 pieces.

Operator	1	2	3	4	5	6	7	8
Experience (x)	16	12	18	4	3	10	5	12
Performance rating (y)	87	88	89	68	78	80	75	83

Required :

Calculate the regression line of performance rating on experience and estimate the probable performance of one operator who has 10 years of experience. [15marks]

(c) The mean, life time of a sample of 100 ;ight tubes produced by a company is to be 1580 has with a standard deviation of 90 hours. Test the hypothesis that the mean lifetime of the tubes produced by the company is 1600 hours at 5% levels of significance.

[5marks]

(d) Explain five characteristics of normal distribution. [5marks]

2. A company gives on the job training to their sales men which is followed by a test. Its considering whether it should terminate the service of any salesman who does not do well in test. The following data gives the test scores and sales made by nine salesmen during the last one year.

Test scores	14	19	24	21	26	22	15	20	19
Sales (ksh '000')	31	36	48	37	50	45	33	41	39

Required :

(i) Compute the co efficiency of correlation between test scores and sales.

[12marks]

(ii) Does it indicate that termination of services of salesman with low test score is justified? [3marks]

(b) A buyer of electric bulbs bought 100 bulbs each of two famous brands. Upon testing these he found that brand A had a mean life of 1500 hours with a standard deviation of 50 hours whereas brand B had a mean life of 1530 hours with a standard deviation of 60 hours. Can it be concluded that at 5% level of significance that these two brands differ significantly in quality of the bulbs. [5marks]

3. (a) Explain assumptions of analysis of variance. [4marks]

(b) A machine is producing ball bearing with diameter of 0.5 inches. It is known that the deviation of the ball bearing is 0.005 inches. A sample of 100 ball bearings is selected and their average diameter is found to be 0.498 inches. Determine the 99% confidence interval. [6marks]

4. (a) Explain four limitations of statistics in an enterprise. [4marks]

(b) 1,000 tube light with a mean life of 120 days are installed in a factory, their length of life is normally distributed with standard deviation of 20 days.

(i) How many tube lights will expire in less than 20 days? [6 marks]

(ii) If it is decided to replace all the tube lights together, what internal should be allowed between replacement if not more than 10% should expire? [4marks]

(iii) Explain the procedure of hypothesis testing. [6marks]
