PAN AFRICA CHRISTIAN UNIVERSITY

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

END OF SEMESTER EXAMINATION FOR THE DEGREE OF

BACHELOR OF ARTS IN COUNSELING PSYCHOLOGY

JANUARY – APRIL 2018 SEMESTER

CAMPUS: ROYSAMBU

DEPARTMENT: PSYCHOLOGY

COURSE CODE: COU4113

COURSE TITLE: COUNSELING STATISTICS

EXAM DATE: FRIDAY 13TH APRIL 2018

TIME: 5:30PM-8:30PM

INSTRUCTIONS

- This examination script consists of **Five (5)** questions.
- Read all questions carefully before attempting.
- Write your **student number** on the answer booklet provided.
- **Section A is Compulsory**
- **Answer any TWO questions in Section B**
- **Provide answer to 2 decimal places unless otherwise stated**

SECTION A: COMPULSORY (30 MARKS)

QUESTION 1

a. Using examples, distinguish between measures of dispersion and measures of central tendency in statistics **4 marks**

b. Use the following data to answer the questions below:

Annual Bonus (thousands)	0-15	15-30	30-45	45-60	60-75	75-90	90-105
No.of employees	8	26	30	45	20	17	4

i). Find the inter-quartile range (6 Marks)

ii). Determine P_{63} (3 Marks)

iii). Calculate the modal bonus (6 Marks)

c. Explain the relationship between correlation and causation. (4 Marks)

d. A counselling department needed to select delegates for a workshop from a list of 60 students and staff. 24 were female and 36 male; 15 of them were vegetarians and 45 not; 42 of them were students and the remaining were faculty; 8 of the faculty were part time lecturers, 8 were on exchange program and the rest were full time staff.

What is the probability of the department selecting one female student that was not a vegetarian? (7 Marks)

SECTION B: Answer any TWO Questions (30 Marks)

QUESTION 2

a). Use the following data to answer the questions below:

Annual Bonus (thousands)	0-15	15-30	30-45	45-60	60-75	75-90	90-105
No.of employees	8	26	30	45	20	17	4

i). Find the inter-quartile range (6 Marks)

ii). Determine P_{63} (3 Marks)

iii). Calculate the modal bonus (6 Marks)

QUESTION 3

A University management wanted to give scholarships to psychology students securing 60% and above marks. The marks of 90 students who were eligible for scholarships are given below:

65	79	83	72	81	64	71	63	61	61	67
74	66	64	79	73	75	76	69	78	67	68
86	90	88	82	75	85	75	76	92	61	72
81	64	71	63	61	61	67	74	66	64	79
93	75	76	93	74	62	84	72	61	72	84
72	61	83	72	81	64	71	63	61	61	67
74	66	64	79	73	63	90	80	83	73	62
84	73	82	83	71	84	61	83	66	61	84
72	61									

The scholarships payable in ('000) of shillings is given as follows:

60-65%	65-70%	70-75%	75-80%	80-85%	85-90%	90% and above
10	20	30	40	50	60	75

i). Prepare a frequency table and then calculate the total monthly scholarship paid to the students. (5 Marks)

ii). Estimate the mean scholarship that was awarded to each student in the month. (5 Marks)

iii). What was the total amount awarded to the students who had 71%-87%? (5 Marks)

QUESTION 4

a). In the following data, two class frequencies are missing.

Class interval	100-110	110-120	120-130	130-140	140-150	150-160	160-170	170-180	180-190	190-200
Frequency	4	7	15	?	40	?	16	10	6	3

However, it was possible to ascertain that the total number of frequencies was 150 and that the median has been correctly found out as 146.25. You are required to find:
i). The two missing frequencies. (10 Marks)
ii). Having found the two missing frequencies, calculate the interquartile range. (5 Marks)

QUESTION 5

a). Distinguish between Spearman's and Karl Pearson's coefficient of correlation. (4 Marks)

b). Find Karl Pearson's coefficient of correlation from the following information showing the number of clients treated in a certain mental hospital for one year. (11 Marks)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OCD	44	70	64	33	89	39	50	85	74	76	49	60
Anxiety	95	40	60	35	90	70	40	50	80	80	65	80