THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY – APRIL 2018 TRIMESTER

FACULTY OF EDUCATION

DEPARTMENT OF POSTGRADUATE STUDIES IN EDUCATION

PART TIME PROGRAMME

ED 508: DATA PROCESSING AND COMPUTER APPLICATIONS

Date: APRIL 2018	Duration: 3 Hours
INSTRUCTIONS: Answer Question ONE and any other THREE Questions	

Q1.   Give a detailed account of the steps followed in hypothesis testing.

(17.5 marks)

Q2.   A case study on total of 25 occupational groups was conducted and the following data was collected. The first variable (X) is the smoking index (average 100) and the second variable (Y) is the lung cancer mortality index (average 100)

id	x	Y
1	77	84
2	137	116
3	117	123
4	94	128
5	116	155
6	102	101
7	11	118
8	93	113
9	88	104
10	102	88
11	91	104
12	104	129
13	107	86
14	112	96
15	113	144
16	110	139

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17	125	113
18	133	146
19	115	128
20	105	115
21	87	79
22	91	85
23	100	120
24	76	60
25	66	51

a) Prepare and enter the above given data set into SPPSS (Save your data as Q1 data)   **(3 marks)**

b) Draw a scatter plot of smoke versus lung cancer mortality index and comment on the relationship displayed.   **(3 marks)**

c) Compute the Pearson product moment correlation coefficient and comment o the results.   **(5 marks)**

d) Given α =0.05, determine whether there is significant relationship between smoking and the lung cancer mortality rate. Support your answer. **(6.5 marks)**

Q3.   A researcher conducted a study to compare the average weight between male and female students using two independent samples. After analysis, the following results were obtained

		Independent samples test				
		Lavene's Test for Equality of variance		t-test for Equality of means		
		F	Sig.	t	df	Sig (2-tailed)
Weight	Equal variances assumed	0.033	0.857	5.468	20	0.000
	Equal variances not assumed			5.382	16.374	0.000

a) State the null and alternative hypotheses for the study   **(4 marks)**
b) Which of the variables is independent?   **(2.5 marks)**
c) Interpret the SPSS output   **(5 marks)**
d) Given α= 0.05, is there significant average weight difference between male and female students? Explain your answer   **(6 marks)**

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Q4. The following scores were obtained from 29 students taking History and Mathematics tests respectively:

Student No.	History	Mathematics
1	76	43
2	81	33
3	78	23
4	76	34
5	76	31
6	78	51
7	76	56
8	78	43
9	98	44
10	88	45
11	76	32
12	66	33
13	44	28
14	67	39
15	65	31
16	59	38
17	87	21
18	77	27
19	79	43
20	85	46
21	68	41
22	76	41
23	77	48
24	98	56
25	99	55
26	98	45
27	87	68
28	67	54
29	78	33

a) Prepare and enter the above data set into SPSS.(save data as Q6adata)
(4 marks)

b) Generate a Histogram and normal curve to compare the two subjects (save output as Q6boutput). **(3 marks)**

c) Explain the results of your output as far as comparison of performance of the two subjects is concerned. **(3.5 marks)**

d) Generate the range, variance and standard deviation. (save output as Q6coutput). **(3 marks)**

e) Make your observation of distribution of scores in the data set. **(4 marks)**

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Q5.   Using employee data on SPSS sample data
       a) Conduct a chi-square test to test the null hypothesis that there is no
          significant relationship between employees' employment category and their
          gender (save output as Q4 output)   **(8 marks)**

       b) Discuss your findings and give your conclusion.   **(9.5 marks)**

Q6.   a) Explain the main issues you need to address when trying to determine which
          is the appropriate statistical test for your research problem.   **(4 marks)**

       b) Justify the effort researchers invest in studying statistics.   **(6.5 marks)**

       c) Underscore the importance of using a computer in analyzing data. **(7 marks)**

END

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