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UNIVERSITY OF RUHUNA

FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF MEDICAL LABORATORY SCIENCE

YEAR END EXAMINATION YEAR 1 -9th Batch

BASIC STATISTICS (SEQ) – June 2018

25th June 2018 **Time: 2.00 – 4.00 p.m.** **Duration: 2 hours**

INDEX NO:.....

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** Scientific calculators are allowed to use. Provide z table and chi- square table

Answer all 4 questions

1. The incubation periods of a random sample of 7 HIV infected individuals is given below (in years)

12.0 10.5 9.5 6.3 13.5 12.5 7.2

a. Calculate the sample mean and the median.

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b. If the number 6.3 in the above data set above were changed to 1.5, what would happen to the sample mean?

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c. Suppose instead of 7 individuals, we had 14 individuals. (we added 7 more randomly selected observations to the original sample of 7). Then what would happen to sample mean and sample standard deviation?

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2. LDL levels of a sample of 200 patients with cardiovascular problems were taken to estimate the average (mean) LDL level of them and inter-quartile range of the variable.

2.1 List 4 possible variables in the above study?

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2.2 identify scale of measurement for each of the variables that you have mentioned above

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2.3 What is (are) the statistic (s) used in the above study?

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2.4 What will happen to the standard error if we increase the sample size to 400?

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3. A study was conducted using a sample of 100 males to see whether there is a relationship between smoking and HDL level. Results are given below.

		HDL level	
		Low	High
Smoking	Yes	40	20
	No	10	30

(a) State null and alternative hypotheses

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(b) Calculate expected values for the observed values

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(c) Test the null hypothesis at 5% level and write your conclusion.

4. Write short notes on

4.1 Normal distribution

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4.2 Systematic sampling

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4.3 Uses of Statistics in Medical laboratory Sciences

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4.4 Correlation coefficient (r)

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