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| | 2 6 FEB 20 |
| UNIVERSITY OF RUHUNA – FACU | LTY OF MEDICINE |
| MEDICAL LABORATORY SCIENCE DEC | GREE PROGRAMME |
| Year End Exam Year 2 – 6 ^t | ^h Batch |
| STATISTICS and RESEARCH METHODOLO | GY MLS 2202 (Theory II) |
| Date : 27 th April 2016 | ime: 10.00 am - 12.00 noon |
| NDEY NO. | |
| | |
| red Essay Questions - Answer all questions | |
| a hour an questions | |
| 1 Cholesterol levels of a sample of patients with her Southern province were taken to estimate the aver patients. | art diseases living in Galle in the rage (mean) cholesterol levels of the |
| .1.1 What is (are) the variable (s) in the above stu | dy? (15 marks) |
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| | |
| .1.2 What is (are) the statistic (s) used in the abov | e study? (15 marks) |
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| .1.3 what is the reference population of the above | study? (15 marks) |
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| .1.4 What would be the best sampling method that | t can be used to select sample |
| subjects if the researcher is having a small bu | aget? Give reasons (25 marks) |
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1.2. Give two (2) examples for each of the following variables. (12 marks)

| 1.2.1 Categorical variable | a b |
|----------------------------|----------|
| 1.2.2 Continuous variable | a b |
| 1.2.3 Nominal variable | a b |
| 1.2.4 Dichotomous variable | e a b |

1.3 What is "*Operationalizing a variable*". Explain the term using an example. (18 marks)

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2.

2.1 List two characteristics of a bar chart (20 marks)

| a |
|--|
| b |
| 2.2 List four measures of dispersion of a continuous data set (20 marks) |
| a |
| b |
| c |
| d, |

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2.3 The sample mean of the LDL levels of 100 patients with coronary heart disease was 160 mg/dL with the standard deviation of 20 mg/dL.

2.3.1 What is the scale of measurement of LDL? (10 marks)

2.3.2 Calculate the 95% confidence interval of the sample mean (50 marks)



- 3. A study was conducted to determine whether there is any association between type of water used and diarrhea in children. A random sample of 400 children was selected from the Galle district. Of the total, 200 children use well water and among them 40 had experienced at least one episode of diarrhea in the last month. Among those who used tap water (n= 200) 20 had experienced at least one episode of diarrhea in the last month.
 - 3.1 State null and alternative hypotheses. (20 marks)

3.2 Draw a 2x2 table for the above data and calculate expected frequencies (20 marks)



3.2 Test the hypothesis at 5% significance level (40 marks)

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3.3 What can you conclude from the results? (10 marks)

1.34



4. What is literature review? Discuss why literature review is important in health research? (100 marks)

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