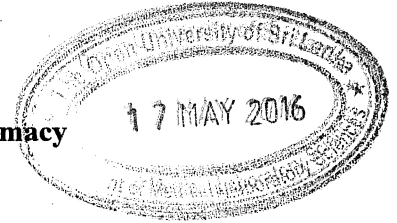




The Open University of Sri Lanka
Bachelor of Medical Laboratory Sciences/ Bachelor of Pharmacy
Academic Year 2015/16 – Semester 2
MLU1141/ PCU1142- Bio Statistics
No Book Test II



Date : 17.05.2016 Time : 09.00am – 10.00am
Registration Number : Duration : 1 hour

There are **two (02)** questions. Answer **all** questions. Each question is allocated fifty marks. Statistical Tables are provided.

1. A researcher is interested in studying the effect of aerobic exercise on blood pressure. The researcher plans to measure the blood pressure at the end of every six months of 300 persons who will participate in the study. Suppose that the participants are willing to engage in aerobic exercise as they are instructed by the researcher. Out of the 300 persons, researcher plans to assign 60 participants to a group who do not engage in aerobic exercise during the study period. Among the rest, 180 and 60 have to be assigned to do aerobic exercise for 30 minutes every other day and for 45 minutes each day respectively.
 - i) Suppose you were asked to advise the researcher on how to allocate the persons into different groups with different exercise patterns. Clearly describe how you advise the researcher. If you use the random number table, clearly state how you read the values.
 - ii) Clearly state any assumptions you make about the participants to design the study as described in part (i).
 - iii) State whether each of the following statements is true or false. In each case, give reasons for your answer.
 - a) The study involves a control group.
 - b) The study described here is a retrospective study.
 - c) If the participants in this study had varied considerably with respect to the age, one can expect large random variation.

2. A researcher is interested in comparing the effect of three brands of eye drops (say E_1 , E_2 and E_3) as a cure for dryness. The researcher collected data on 300 persons selected from a group of 2200 persons who already use eye drops. Among the 2200 persons, 900 frequently use the computer in daily activities, 600 are office workers who seldom use computers and 700 are teachers who moderately use computers. Use of computers is suspected to have an effect on eye dryness. Further it is known that in each group, 30% use E_1 , 30% use E_2 and 40% use E_3 . From each group of workers representing different computer usage, the researcher randomly selected 30, 30 and 40 persons who use E_1 , E_2 and E_3 respectively.
- i) State whether each of the following statements is true or false. In each case, give reasons for your answer.
- a) In this study, the researcher has done cluster sampling.
 - b) Since the researcher has randomly selected persons, the sample will be a representative sample.
 - c) In this study, persons serve as sampling units.
- ii) Explain the following terms in relation to this study.
- a) Sampling error
 - b) confounding

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