THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF BASIC SCIENCES
ACADEMIC YEAR 2018/2019 – SEMESTER I

BACHELOR OF PHARMACY HONOURS – LEVEL 4
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS – LEVEL 4
BSU4230 – BASIC STATISTICS
CONTINUOUS ASSESSMENT I (NBT I)   DURATION: ONE HOUR

DATE: 21st NOVEMBER 2018   TIME: .01.30 PM – 02.30 PM

REGISTRATION NO: ....

IMPORTANT INSTRUCTIONS/ INFORMATIONS TO CANDIDATES

- This question paper consists of **10 pages** with **10 Multiple Choice Questions (Part A)** and **02 Structured Essay Questions (Part B)**.

- Write your Registration Number in the space provided.

- Answer **ALL** questions.

- **Multiple Choice Questions (Part A):** Indicate answers in the answer sheet provided by placing a cross (X) in **INK** in the relevant cage. (answers in pencil will **NOT** be marked)

- **Structured Essay Questions (Part B):** Write answers within the space provided.

- Do not remove any page/part of this question paper from the examination hall.

- Mobile phones and any other electronic equipment are **NOT** allowed. Leave them outside.

- **Please fill the address sheet. (See last page)**

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CONTINUOUS ASSESSMENT I (NBT I)

REGISTRATION NO: ....

ANSWER SHEET FOR PART A

| Q. No.	(a)	(b)	(c)	(d)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Part A – Multiple Choice Questions

(20 marks)

Choose the most suitable/best answer and indicate with a 'X' in the answer sheet

1. Select the correct statement.
   a) A double-blind trial avoids assessment bias.
   b) Randomization is collection of several observations under same experimental condition.
   c) Assigning the treatments to the experimental units at random is called replication.
   d) In experimental studies, Investigator does not control factors over the study.

2. Collecting data on each and every experimental unit in the population is called,
   a) sampling
   b) census
   c) randomization
   d) replication

3. Select the most appropriate measure of central tendency for skewed interval data.
   a) Mean
   b) Median
   c) Variance
   d) Range

4. Select the measure/s of central tendency which cannot be used for ordinal data.
   a) Mean
   b) Median
   c) Mode
   d) Both (a) and (b)

5. Select the nominal scale variable/s.
   a) Ethnic group
   b) Age categorized as young, middle-aged or old.
   c) Height in cm
   d) Both (a) and (b)

6. Which of the following is mainly used to explore the relationship between two numerical variables?
   a) Histogram
   b) Stem and leaf plot
   c) Scatter plot
   d) Bar chart

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7. Consider the following box plot and select the correct statement.

50 53 56 59 62 65 68 71 74 77 80
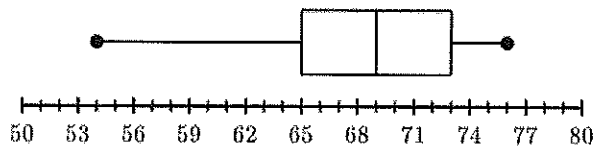
   a) Range of the data is 22.
   b) First quartile (Q1) of the data is 54.
   c) Third quartile (Q3) of the data is 76.
   d) All of the above are correct.

8. The following stem and leaf plot shows test scores of 20 students. Find the median, mode, and range of the marks.

Stems	Leaves
2	2 4 8 8 8 9 9
3	0 2 2 4 6 6 8
4	1 1 4 6
5	0 2

   a) Median=35, Mode=28, Range=30
   b) Median=35, Mode=8, Range=7
   c) Median=33, Mode=8, Range=7
   d) Median=33, Mode=28, Range=30

9. Select the correct statement.
   a) In normal distribution, mean is always zero and the standard deviation is 1.
   b) The distribution of the income per household in Sri Lanka is an example of normal distribution.
   c) Standard normal distribution is a positively skewed distribution.
   d) Normal curve is a unimodal frequency distribution.

10. Errors caused due to random variation in the observation is called,
   a) sampling error.
   b) non-sampling errors.
   c) response bias.
   d) missing value bias.

Part B –Structured Essay Questions

(80 marks)

Write answers in the space provided.

1. The marks obtained for Statistics (out of 10) by 19 students are given below.

   4,   6,   5,   5,   4,   6,   3,   3,   5,   3,   5,   4,   4,   6,   7,   3,   5,   5,   7

   i. Complete the frequency distribution table given below for above data.

Mark (x)	Frequency (f)	Relative Frequency	fx

(20 marks)

   ii. Sketch a simple bar chart for Statistics marks by using their frequencies (f).

(05 marks)

iii. Calculate the mean mark of a student by using the frequency table in part i. Show your calculations clearly.

(05 marks)

iv. Calculate the median mark.

(04 marks)

v. What is the mode of marks?   **(02 marks)**

vi. Calculate the range of marks.

(02 marks)

vii. Determine the upper quartile (Q_3) and the lower quartile (Q_1) of marks.

(04 marks)

viii. Calculate the inter quartile range of marks.

(02 marks)

ix. Marks of four randomly selected students from above 19 students are given below (x).

7, 4, 3, 6

a) Calculate the mean mark ($\bar{x}$) of above 4 students and complete the table given below.

Mark (x)	$(x - \bar{x})$	$(x - \bar{x})^2$
3		
4		
6		
7		

(10 marks)

b) Calculate the variance and standard deviation of their marks.

(06 marks)

2.

a) Write down the four level of measurement scales and give one example for each scale.

i. _____

ii. _____

iii. _____

iv. _____

(16 marks)

b) Determine whether the following variables are discrete or continuous

i. Number of deaths in a hospital per day - _____

ii. Age of person - _____

iii. Length of new born baby - _____

iv. Number of pregnancies of woman - _____

(04 marks)

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Reg. No:...

Name:...

Address:...

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