



# UNIVERSITY OF KELANIYA – SRI LANKA

Centre for Distance and Continuing Education

FACULTY OF COMMERCE & MANAGEMENT STUDIES

Bachelor of Commerce (Special) Degree Second Year Examination (External) – 2016

May 2022

**BCOM E2035 – Business Statistics**

**No. of questions: Six (06)**

**Time: 03 hours**

**Answer any five (05) Questions**

## **Question No. 01**

- a) What is the importance of using a questionnaire when collecting data. (05 Marks)
- b) What are the other alternative methods except questionnaire when collecting data. (05 Marks)
- c) What are the various graphical methods that can be used in data collection. Explain what is the importance of using such graphical methods when presenting the data. (10 Marks)
- (Total 20 Marks)**

## **Question No. 02**

- a). Briefly explain how the measures of central tendency can be used to identify a shape of a distribution. (05 Marks)
- b). The following figures shows number of defective items in a certain product  
6, 3, 10, 8, 4, 8, 12, 16, 10, 7, 11, 9, 1, 13, 4

Calculate the following and comment on them.

- i). Mean
- ii). Median
- iii). Mode
- iv). Range
- v). Standard Deviation

(15 Marks)

**(Total 20 Marks)**

**Question No. 03**

a) Describe using your own words 'What is probability' and explain with examples what is the importance of studying probability in your day today life.

(08 Marks)

b) Briefly explain the following probability distributions with examples. Consider that when you are explaining, writing and explaining the probability functions is essential.

- i). Binomial Distribution
- ii). Poisson Distribution
- iii). Normal Distribution

(12 Marks)

**(Total 20 Marks)**

**Question No. 04**

a). What is meant by sampling? What is the relationship between sampling and population.

(05 Marks)

b). Following are illustrated a sample of annual sales (in rupee billion) of a certain business firm.

Year	Sales
2000	2.6
2001	2.5
2002	2.3
2003	3.2
2004	2.9
2005	3.2
2006	3.3
2007	3.6
2008	3.8
2009	3.7
2010	3.4
2011	3.6
2012	4.0
2013	4.2
2014	4.5
2015	4.6
2016	4.4
2017	4.2
2018	3.8
2019	4.8

Answer the following questions using above data.

i). What is the most suitable graphical method to illustrate variability of the above data.  
(05 Marks)

ii). If you have provided the following summary measures, to illustrate change in firms' sales (y) with year (x) determine regression equation x on y.

$\sum x = 210$	$\sum xy = 835.20$
$\sum x^2 = 2870$	$\sum y = 72.6$
	$\sum y^2 = 273.22$

Comment on the results.

(10 Marks)

**(Total 20 Marks)**

**Question No. 05**

Explain any four of the following how they important when studying the business statistics.

- a). Seasonal variations
- b). Cyclical variations
- c). Moving average method
- d). Additive models in time series
- e). Principle component analysis in time series in brief.

**(5 x 4 = Total 20 Marks)**

**Question No. 06**

- a). What is meant by “inference”?

**(06 Marks)**

- b). How do statistical inference combine with testing hypothesis.

**(08 Marks)**

- c). Explain the following things in testing hypothesis.

- i) Type I error
- ii) Type II error

**(06 Marks)**

**(Total 20 Marks)**