INSTITUTE OF HUMAN RESOURCE ADVANCEMENT
UNIVERSITY OF COLOMBO, SRI LANKA
Masters Degree in Business Management - Course No.02
2nd Semester Examination
(Held in July, 2014)
MBM 08 – Statistics for Management

Instructions to the Candidates

(1) Total number of pages – Four (04)

(2) Total number of questions - Five (05)

(3) Answer all questions.

(4) If a page or a part of this question paper is not printed, please inform the Supervisor immediately.

(5) Time allocated for the examination is three (03) hours.

(6) Write your index number in all pages of answer script

(7) Tie up all answer sheets at the end of the examination

1. Statistics is a scientific subject which has many functions used in decision making in business.

   i.   List down the functions of Statistics.

   (04 Marks)

   ii.   Describe the difference between Descriptive and Inferential Statistics?

   (04 Marks)

   iii. Why samples are important in management studies?

   (04 Marks)

   iv.   Briefly explain Continuous and Discrete variables with examples.

   (04 Marks)

   v.   Distinguish the random and non random sampling techniques.

   (02 Marks)

   vi.   What approaches are used in decision making?

   (02 Marks)
   (Total 20 marks)

2. No. of accidents during the last fifty days has been provided in the following frequency Distribution.

Accidents	No. of days
20-29	6
30-39	8
40-49	12
50-59	9
60-69	8
70-79	7
	50

   i.   Find the average no of accidents per day

   ii.   What is the mode no of accidents per day?

   iii. Calculate Variance and Standard deviation of the no of accident per day.

   iv.   Interpret the Kurtosis.

   v.   Find the Coefficient of variance.

   (Total 05×04 = 20 marks)

3. A company provides the cost of two types of raw materials (RM 1 and RM 2) used in production and the profit earned for the last 10 years.

Cost of RM 1 (Rs.000)	Cost of RM 2 (Rs.000)	Profit (Rs.000)
5	40	20
5	30	20
4	30	10
4	25	10
6	25	20
6	30	15
6	40	12
5	40	10
4	35	20
4	25	10

i. Construct a Multiple Regression Model to represent the given data.

(08 Marks)

ii. What will be the profit if the cost of RM 1 is Rs.8 and RM 2 is Rs. 50?

(02 Marks)

iii. Identify and interpret the relationship between cost of RM 1 and profit.

(06 Marks)

iv. Is there a Multicollinearity problem?

(04 Marks)
(Total 20 marks)

4. i. Briefly describe the Components of Time Series.

(04 Marks)

ii. Explain the difference between Additive and Multiplicative Time Series Models.

(02 Marks)

iii. The profit of a business has been provided for three years on quarterly basis.

Year	Quarter	Profit (Rs. Mn)
1	Q1	30
	Q2	12
	Q3	10
	Q4	09
2	Q1	25
	Q2	13
	Q3	10
	Q4	09
3	Q1	27
	Q2	15
	Q3	15
	Q4	10

a. Calculate the trend line using three points moving average.

(06 Marks)

b. Derive Seasonal Indices for quarters.

(05 Marks)

c. Obtain deseasonalized data.

(03 Marks)

(Total 20marks)

5. i. Describe Law of Statistical Regularity and Central limit theorem.

(04Marks)

ii. What is meant by standard error?

(02Marks)

iii. Briefly describe acceptance and rejection regions in terms of hypothesis testing.

(02Marks)

iv. Define Null hypothesis?

(02 Marks)

iv. A researcher has done a study to examine the usage of internet and technology by the people. Size of the selected sample is 50. The average usage hours are 11.5 with a

standard deviation of 3.5 hours. Estimate the average usage hours of the people by using 95% confidence.

<div align="right">(04 Marks)</div>

v.   Ministry of education says that there is no any difference between the students of schools "A" and "B". When a sample size of 10 from each school is selected, the average mark of students in the "A" school is 85 and in the "B" school is 78. Standard deviations are 10 and 8 marks respectively. Test the statement of Ministry at 95% level of confidence.

<div align="right">(06 Marks)</div>

<div align="right">**(Total 20 marks)**</div>

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