

**B.A. III SEMESTER SUPPLEMENTARY EXAMINATION, MAY/JUNE 2019**

**ECONOMICS-ECS 101**

**Data Analysis-I**

**Duration:** 02 Hours

**Marks:** 80

**Instructions:** 1. All questions are compulsory.

2. Use of a simple calculator is permitted

3. The sub-questions in Q I and Q II are to be answered in 100 words each.

4. Questions carrying 12 Marks are to be answered in 400 words each.

5. Draw diagrams wherever necessary.

Q I) Answer **any four** of the following:

**4x4=16**

(i) What are spreadsheets? Explain any four features of spreadsheets.

(ii) What is meant by data sorting?

(iii) How can rows be transformed into columns on a spreadsheet?

(iv) For the data given below draw a Histogram

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency (f)	2	5	12	18	10	3	5

(v) Briefly describe the different types of data.

(vi) Explain the process of coding.

Q II) Answer **any four** of the following:

**4x4=16**

(i) What are the characteristics of the arithmetic mean?

(ii) What is the significance of the measures of dispersion?

(iii) Find the range and coefficient of range for the following frequency distribution.

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency (f)	2	12	22	20	14	4	1

(iv) Explain the interpretation of a regression equation using an example.

(v) Differentiate between causation and correlation.

(vi) Explain the insignificance of goodness of fit in a multiple regression model.

Q III A) The following table gives the marks of 65 students in Statistics. Calculate the average marks of this group. Calculate the median and mode for the data given below:

**12**

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	4	8	14	18	12	7	2

**OR**

B) The following data gives the savings bank accounts balances of 9 sample households selected in a survey.

The figures are in rupees.

**12**

750, 2000, 1800, 72000, 480, 550, 3700, 1900, 4700

(a) Find the mean and median for these data

(b) Do these data contain an outlier? If so, exclude this value and recalculate the mean and median. Which of these summary measures has a greater change when an outlier is dropped?

(c) Which of these two summary measures is more appropriate for this series?

Q IV A) Calculate inter-quartile range, quartile deviation and coefficient of quartile deviation for the data given below: 12

Class interval	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	4	8	9	16	10	7	6

**OR**

B) Calculate the mean and standard deviation for the following data: 12

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency (f)	2	12	22	20	14	4	1

Q V A) Obtain the Rank Correlation coefficient for the following data: 12

X	88	95	70	60	50	80	75	85	48	42
Y	84	90	88	55	48	85	82	72	40	42

**OR**

B) Calculate Karl Pearson's co-efficient of correlation for the following data. 12

x	920	2800	840	202	800	640	492	380
y	560	2300	480	137	1230	1050	1100	575

Q VI A) Following are Consumption (Thousands of rupees) and Disposable Income (Thousands of rupees) for 10 randomly selected households in a village. 12

Consumption (Thousands of rupees)	35	15	25	14	18	22	46	15	12	18
Disposable Income (Thousands of rupees)	85	65	72	45	55	48	66	44	35	45

i) Estimate the regression equation such that Consumption = f (Disposable Income).

**OR**

B) The table below shows the number of two wheelers registered (Y) for 5 cities and sale of two wheeler tyres (X) in the cities. Given the regression equation:

$$X = 65.29 + 0.488 Y$$

12

- i) Estimate the various sum of squares.
- ii) Calculate and comment on the goodness of fit.

X	600	630	720	750	800
Y	1250	1100	1300	1350	1500

**B.A. III SEMESTER END EXAMINATION, OCTOBER 2018**

**ECONOMICS-ECS 101**

**Data Analysis-I**

**Duration:** 02 Hours

**Marks:** 80

**Instructions:** 1. All questions are compulsory.

2. Use of a simple calculator is permitted

3. The sub-questions in Q I and Q II are to be answered in 100 words each.

4. Questions carrying 12 Marks are to be answered in 400 words each.

5. Draw diagrams wherever necessary.

Q I) Answer **any four** of the following:

**4x4=16**

(i) What are the uses of spreadsheets?

(ii) How can you filter data?

(iii) How can you sort data by a custom list?

(iv) For the data given below draw a Histogram

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency (f)	2	12	22	20	14	4	1

(v) Explain the difference between quantitative and qualitative variables.

(vi) Using an example describe the coding process.

Q II) Answer **any four** of the following:

**4x4=16**

(i) What are the advantages of the median?

(ii) What are the uses of the standard deviation?

(iii) Find the range and coefficient of range for the following frequency distribution:

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency (f)	2	12	22	20	14	4	1

(iv) What is meant by correlation?

(v) What interpretation can be derived from the goodness of fit?

(vi) State and explain any two uses of regression analysis.

Q III A) The frequency distribution for the weight in grams of mangoes is given below. Calculate the arithmetic mean, median and mode for the data given below: **12**

Weight (in grams)	510-520	520-530	530-540	540-550	550-560	560-570	570-580
Number of mangoes	14	20	42	54	45	18	7

**OR**

B) The following data gives the savings bank accounts balances of 10 sample households selected in a survey. The figures are in rupees. 12

6788	3561	2628	2649	5909	5909	25370	4242	3321	4691
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(a) Find the mean and median for these data

(b) Do these data contain an outlier? If so, exclude this value and recalculate the mean and median. Which of these summary measures has a greater change when an outlier is dropped?

(c) Which of these two summary measures is more appropriate for this series?

Q IV A) Find the mean deviation (from mean) and mean deviation (about median) for the following data: 12

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency (f)	8	12	15	11	7	2	5

**OR**

B) Calculate the standard deviation for the following data: 12

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of students (f)	1	3	4	5	12	16	15	5	2	1

Q V A) Calculate Karl Pearson's co-efficient of correlation for the following data. 12

X	78	89	96	69	58	840	480
Y	125	137	156	112	107	202	137

**OR**

B) Obtain the Rank Correlation coefficient for the following data of 8 students 12

Marks in statistics	62	53	51	25	79	43	60	33
Marks in Accounts	52	63	45	36	72	65	40	25

Q VI A) Using Least square method fit a straight line trend, such that  $y = f(x)$ . Also estimate the value of 'y' when  $x = 13$ . 12

Y	12	15	15	23	24	38	42	48
X	5	7	8	7	9	15	10	12

**OR**

B) Estimate the goodness of fit. Given, the equation of the regression line is

$$\hat{y} = 18.04 - 1.34X$$

12

X	2	4	5	6	8	11
Y	18	12	10	8	7	5

