2025

ECONOMICS — HONOURS — PRACTICAL

Paper : SEC-2P

[Introductory Statistics and Application (II)]

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***any five*** questions.

Instructions :

1. Perform all tasks in Microsoft Excel in the computer laboratory without using internet facility. Save your work with appropriate file naming [e.g. Roll No_SEC2 (Pr.)].
2. Demonstrate your work to the examiners and explain your steps if required.
3. Ensure data accuracy and proper formatting in all tasks. Use the provided dataset for all questions unless specified otherwise.
4. In the same workbook, use different worksheets for different questions, and rename them accordingly.
5. Save the Excel file with all worksheets. Export the final workbook as a PDF file.

Excel Dataset: Student_Scores (Table no. 1)

The dataset contains fictional student data with variables : Student ID, Name, Marks in Economics and Marks in Statistics.

Table no. 1

Student ID	Name	Marks in Economics	Marks in Statistics
S001	Amit Sen	85.5	88
S002	Priya Sengupta	72	65
S003	Rahul Das	45.5	50
S004	Namrata Ganguly	90	92.5
S005	Bikram Pal	60	55
S006	Anjali Roy	78.5	80
S007	Suresh Kar	35	40
S008	Pooja Dey	82	85
S009	Arjun Mukherjee	67.5	70
S010	Deepa Nag	95	93

Question 1 : Data Entry and Formatting (10 Marks)

(a) Data Entry (5 marks) :

(i) Enter the provided dataset (e.g., "Student_Scores") into an Excel worksheet. Ensure accurate data entry for all variables (Student ID, Name, Marks in Economics, Marks in Statistics). (3)

(ii) Apply appropriate formatting : (2)

✓ Use number formatting for marks (2 decimal places).

✓ Apply cell borders to the data table.

✓ Use bold headers and center-align them.

✓ Convert the range to a table.

(b) Data Validation (5 marks) :

(i) Apply a data validation rule to the "Marks in Economics" and "Marks in Statistics" columns to ensure values are between 0 and 100. (3)

(ii) Add conditional formatting to highlight marks below 40 in red and marks above 80 in green. (2)

Question 2 : Data Sorting and Filtering (10 Marks)

(a) Sorting (2 marks) :

(i) Sort the dataset by "Marks in Economics" in descending order. Create a new worksheet and copy the sorted data. (1)

(ii) Sort the dataset by "Marks in Statistics" in ascending order. Create a new worksheet and copy the sorted data. (1)

(b) Filtering (3 marks) : Apply "advanced filter" to display only students who scored above 60 in both Economics and Statistics. (3)

(c) Age Calculation (2 marks) : Calculate your age in years from the current date using Excel function. (2)

(d) Transpose (3 marks) : How can you Transpose Table no. 1 data in MS Excel? (3)

Question 3 : Frequency Analysis and Data Visualization (10 Marks)

(a) Frequency Table (5 marks) :

(i) Create a frequency table for "Marks in Statistics" using appropriate class intervals (e.g., 0 – 20, 21 – 40, 41 – 60, 61 – 80, 81 – 100).

(ii) Use a Pivot Table to summarize the frequency distribution. (3+2)

(b) Data Visualization (5 marks) :

(i) Create a Histogram to represent the frequency distribution of "Marks in Statistics." Customize the chart with a title ("Statistics Marks Distribution"), labelled axes, and a legend.

(ii) Add a Pie chart to show the proportion of students in each class interval. (3+2)

Question 4 : Descriptive Statistics (10 Marks)

(a) Central Tendency and Dispersion (5 marks) :

(i) Use Statistical functions to calculate the Mean, Median, Mode, Standard Deviation and Variance for "Marks in Economics" for the entire dataset (without using Data Analysis Toolpak).

(ii) Use Data Analysis Toolpak, and present the "Descriptive Statistics" results for "Marks in Statistics" in a neatly formatted table. (3+2)

(b) Graphical Representation (5 marks) :

(i) Create a Box Plot for "Marks in Economics" to show the distribution and identify outliers.

(ii) Generate a Scatter Diagram to explore the relationship between "Marks in Economics" and "Marks in Statistics". (3+2)

Question 5: Bivariate Analysis (10 Marks)

(a) Correlation (5 marks) :

(i) Calculate the Correlation Coefficient between "Marks in Economics" and "Marks in Statistics" using the CORREL function.

(ii) Interpret the result in a cell comment (e.g., strong/weak, positive/negative correlation). (3+2)

(b) Simple Regression (5 marks) :

(i) Perform a simple linear regression using "Marks in Economics" as the independent variable and "Marks in Statistics" as the dependent variable (use the Data Analysis ToolPak).

(ii) Report the regression equation and predicted value for a student with 75 marks in Economics. (3+2)

Question 6 : (10 marks)

(a) Measuring Inequality (7 Marks) :

Calculate Lorenz curve, and Gini Coefficient for the given dataset. (5+2)

Table no. : 2

Name	A	B	C	D	E	F	G
Income	2345	6789	5678	4567	8901	7890	3456

(b) Cell Referencing (3 Marks) :

What is the difference between relative and absolute referencing? Explain with an hypothetical example. (1½ + 1½)
