

315326

25226

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Answer each next main Question on a new page.
- (3) Illustrate your answer with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Assume suitable data, if necessary.
- (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
- (8) Use of Steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. **Attempt any FIVE of the following:** **10**
- a) Define Data Analytics. State any two importance.
- b) Give the steps to create chart using chart wizards.
- c) List any four types of plots in matplotlib.
- d) Define skewness and kurtosis.
- e) Give data types in Data Analytics.
- f) State the role of `plt. title()` and `plt.legends()` in matplotlib.
- g) List various steps in data cleaning.

P.T.O.

2. Attempt any THREE of the following: 12

- Describe life cycle of Data Analytics in detail with neat diagram.
- Differentiate between formatting the plot area and formatting chart area. (Any four points)
- Find Spearman's correlation coefficient for the following data:
 $x : [10 \ 20 \ 30 \ 40 \ 50]$
 $y : [30 \ 40 \ 10 \ 20 \ 50]$
- Explain steps for sorting and filtering in pivot table.

3. Attempt any THREE of the following: 12

- Differentiate between descriptive analysis and predictive analysis. (Any four points)
- Describe the steps for installing and setting up matplotlib in Python.
- Draw pie chart for the following data. Also give steps to explode largest slice and add label:
 $A = 30, \ B = 25, \ C = 20, \ D = 25.$
- Explain steps for creating a pivot table in excel.

4. Attempt any THREE of the following: 12

- Draw a suitable chart for following data:

Items	2022-23	2023-24	2024-25
Books	300	250	220
Stationary	200	150	80
Total	500	400	300

- Explain correlation and regression in detail.

- c) Calculate:
- Coefficient of mean deviation for data [2, 4, 6]
 - Coefficient of Quartile deviation for data [1, 3, 5, 7, 9]
- d) Create pivot chart for different types of grouping item for following data:

Student Id.	Name	Class	Subject	Marks	Exam Date
101	Rohan	10	Maths	85	05/01/2025
102	Ram	10	Science	72	05/01/2025
103	Sham	9	English	65	07/02/2025
104	Sita	10	History	90	12/02/2025
105	Gita	9	Maths	87	20/03/2025

- e) Explain the steps to move an embedded charts to a new position within same worksheet.

5. Attempt any TWO of the following:

12

- a) A survey investigates whether there is an association between Gender and preferred learning platform.

	Youtube	Coursera	Udemy	Total
Male	20	10	20	50
Female	25	10	15	50
Total	45	20	35	100

- Calculate the Chi-Square statistics.
 - At 5% level of significance, test whether significant association is there or not.
 $(\alpha = 0.05 \rightarrow \text{critical}, x^2 = 5.991)$
- b) Explain sampling funnel and central limit theorem with example.
- c) Write a Python program to create bar chart that compares, student performance across three divisions (A, B, C) for five years and add legends, title and labels.

6. Attempt any TWO of the following:**12**

- a) The dataset below contain 11 (eleven) values:
26, 37, 24, 28, 35, 22, 31, 53, 41, 64, 29:
- i) Use interquartile range method to identify and outlier in the dataset.
 - ii) Draw a boxplot for visual representation and highlight the outlier, if any.
- b) Write a Python program using Matplotlib to generate a line chart with titles, labels and legends.
- c) Describe the steps for making excel dashboard. Draw different elements on Excel Dashboard. (Assume suitable data)
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