

Unit III Data Analytics with Excel

2 Marks Question

- 1) Define the following term
 - a) Excel Dashboard b) Pivot Table and Pivot Chart
 - c) Forecasting in the context of Excel. D) Trend Analysis
- 2) List steps to insert a Pivot Table and Pivot chart.
- 3) What is the use of Dynamic Filters and slicer in dashboards?
- 4) What is the use of Refresh option in Pivot Tables?
- 5) Write any two formatting options available in Pivot Tables.
- 6) State two advantages of using Slicers and Pivot Table in Excel.
- 7) What is the function of “Grouping Items” in a Pivot Table?

4 Marks Question

- 1) Explain the steps for creating an Excel Dashboard.
- 2) Describe the process of sorting and filtering in Pivot Tables.
- 3) Explain grouping of items in Pivot Charts with suitable examples.
- 4) Illustrate how Excel can be used for trend analysis.
- 5) Create a Pivot Table from student marks dataset and display subject-wise averages.
- 6) Explain the role of Slicers in updating Pivot Table data.
- 7) Design a Pivot Chart for employee attendance data and explain how to format and update it.
- 8) Write the steps to Updating a Pivot Table.
- 9) Explain the components of an Excel Dashboard.
- 10) Apply trend analysis to a yearly revenue dataset and forecast sales for the next quarter using Excel tools.

Unit – IV: Data Visualization

R–Level (2 Marks each)

1. 1. Define
 - a) Chart in Excel b) Plot Area in a chart c) embedded chart in Excel d) data marker
2. State the steps to chart non-adjacent cells with example.
3. What is the use of a Legend and marker in a chart?
4. What is meant by data range in Excel charts
5. What is meant by Exploding a Slice in a Pie Chart?
6. Mention any two formatting options available for Data Markers.
7. Explain the procedure to create a simple column chart in MS Excel with example
8. List the steps to create Chart Wizard in Excel with example
9. How do you change the charts axis range to display a specific subset of data?

(4 Marks each)

- 1 Describe the steps to move and resize an embedded chart.
10. Explain how to change the way data is displayed in a chart.
11. Explain how to move a Pie Chart to its own sheet and add data labels.
12. Explain the steps with example
 - i) format chart title and legend in Excel,
 - ii) Formatting and aligning numbers and text in a chart.
13. Write steps to create pie chart with example.
14. What are the ways to explode a pie chart explain with example
15. Select non-adjacent cells from the following table to create a chart showing only “Product” and “Profit”. Write steps.

Product	Cost	Profit
P1	500	200
P2	600	250
P3	400	150

Unit – V: Data Visualization using Python

R–Level (2 Marks each)

1. Define Matplotlib and its role in data visualization.
2. State the command to install Matplotlib in Python.
3. Write the syntax to create
 - a) simple line plot
 - b) bar plot
 - c) scatter plot
 - d) Histogram
4. Mention two file formats supported for saving plots in Matplotlib.
5. Write the function to change the figure size in Matplotlib.
6. State the use of following function
 - i) `plt.xlabel()` and `plt.ylabel()`
 - ii) `plt.xlim()` and `plt.ylim()`
 - iii) `plt.xticks()` and `plt.yticks()`
7. Which function is used to display legend in a plot
8. State the command to save a plot as a PNG image, PDF and SVG
9. State the use of dpi parameter in `plt.savefig()`.

U–Level (4 Marks each)

10. Explain the procedure to install and set up Matplotlib in Python.
11. Describe the steps to add titles, labels, and legends to a plot using matplotlib with example
12. Describe the process of changing figure size and aspect ratio in Matplotlib with example.
13. Explain how to customize axis limits, ticks, and labels. Show with example.
14. Discuss how to save a plot in PNG format with a higher resolution.
15. Explain the concept of interactive visualizations using Matplotlib widgets.
16. Create a Matplotlib plot and save it in PDF and SVG formats with high resolution.
17. Design an interactive visualization using Matplotlib widgets to adjust data points dynamically.
18. Prepare a plot showing monthly sales, change its aspect ratio, and export it in PNG format.
19. Explain with example how to create a scatter plot in Matplotlib.
20. Write steps to Export plots in different formats.
21. Write a Python program to create a bar chart for the following data:
Categories = ["Pen", "Pencil", "Book"], Sales = [50, 30, 80]
22. Write a Python program to plot a histogram for given dataset:
data = [12, 45, 67, 23, 45, 67, 89, 45, 67, 12]

23. Write a program to draw a line plot for months = ["Jan", "Feb", "Mar", "Apr"] and sales = [2000, 2500, 1800, 3000].
24. Write a program to create a Horizontal bar chart with customized X-axis ticks and Y-axis range.
25. Write a program to generate a scatter plot and save it as "scatter.svg" with 300 DPI resolution.
26. Write a program to generate a bar chart and save it in three formats: PNG, PDF, and SVG.