KARPAGAM
COLLEGE OF ENGINEERING
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Degree / Branch : B.E: CSE / B.Tech AI&DS Semester / Year: VI & IV/ III yr & II Yr

Course Code &Title: 18ID29/21ID29 & DATA VISUALIZATION

MODULE I

Part-A

1.	State the law of similarity.	CO1	K1
2.	List the role of data visualization in business intelligence.	CO1	K1
3	Give an example of poor visualization related to Soccer score display.	CO1	K2
4.	List the key factors surrounding the visualization project.	CO1	K1
5.	What is parsing in data visualization?	CO1	K1
6.	Indicate the importance of line chart.	CO1	K2
7.	Write the relation between data visualization and data science.	CO1	K2
8.	List any four data visualization tools.	CO1	K1
9.	What is interactive dashboard in Tableau?	CO1	K1
10.	Differentiate measures and dimensions in Tableau tool. Assume you are having a dataset pertaining to CO2 emission.Indicate the examples of dimensions and measures used in it.	CO1	K2
11.	List the importance of data visualization.	CO1	K1
12.	Differentiate data presentation and data representation.	CO1	K2
13.	List any two design objectives of data visualization.	CO1	K1

14.	Give an example of news paper infographic that portrays strong emotional impact.	CO1	K2
15.	What is refining step in data visualization?	CO1	K1
16.	Indicate the features of pie chart.	CO1	K2
17.	Define outliers.	CO1	K1
18.	List any two programming language used for data visualization.	CO1	K1
19.	What are the limitations of using more number of colours in visualization?	CO1	K1
20.	Indicate the role of DV in health industry with respect to COVID data analysis.	CO1	K2
21.	List the role of refining stage in data visualization.	CO1	K1
22.	What is mining in data visualization step ?	CO1	K1
23.	Define filtering process.	CO1	K1
24.	List two best practices while using bar chart?	CO1	K1
25.	Give two limitations of data visualization.	CO1	K2
26.	Differentiate Data science and Data mining.	CO1	K2
27.	Differentiate Data visualization and data analysis.	CO1	K2
28.	Give an example of data presentation.	CO1	K2
29.	Indicate the properties of bubble chart.	CO1	K2
30	Define exploratory data visualization.	CO1	K1
31	What is data preparation?	CO1	K1
32	List the role of statistics in data visualization.	CO1	K1
33	State the properties of scatter plot.	CO1	K1
34	What is positive correlation?	CO1	K1
35	Differentiate Box plot and Violin plot.	CO1	K2
36	Give an example of categorical data used in data analysis.	CO1	K2
37	Give two examples of geographical data used for data visualization.	CO1	K2

38	Define Hypotheses.	CO1	K1
39	List the properties of histogram.	CO1	K1
40	Differentiate vertical and horizontal bar chart.	CO1	K2
41	Indicate two important features of Tableau.	CO1	K2
42	Give an example of pragmatic effect of data visualization.	CO1	K2
43	Define widget.	CO1	K1
44	Why data visualization is important for any professional career?	CO1	K2
45	What is quantitative data?	CO1	K1
46	List the importance of interactive data visualization.	CO1	K1
47	Differentiate data visualization and data modelling.	CO1	K2
48	List the seven stages of data visualization.	CO1	K1
49	Give two examples of business intelligence tool.	CO1	K2
50	What is dashboard in Tableau?	CO1	K1

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MODULE I

Part-B

1.	(i)	Illustrate the steps involved in creating an infographic related to an election result by applying visualization design objectives.	(8)	CO2	K3
	(ii)	Explain the need of parsing in data visualization.	(4)	CO1	K2
	(iii)	Discuss the limitations of static visualization.	(4)	CO1	K2
2.	(i)	Illustrate the stages involved in data visualization process with an example.	(8)	CO2	K3
	(ii)	Indicate the role of area chart.	(4)	CO1	K2
	(iii)	Interpret the need for stacked bar-chart.	(4)	CO1	K2
3.	(i)	Sketch a scatter plot to show exploratory data visualization.	(6)	CO2	K3
	(ii)	Identify the limitations of line chart.	(4)	CO2	K3
	(iii)	"Visual analysis can be facilitated through static portrayal of data". Interpret the above statement with valid points.	(6)	CO2	K3
4.	(i)	Classify the visualization charts used in MS Excel.	(6)	CO2	K3
	(ii)	Construct a visualization framework that reveals a pragmatic tone.	(4)	CO2	K3
	(iii)	Apply the visualization design principles and show the steps in creating Tableau dashboard.	(6)	CO2	K3
5.	(i)	Illustrate the steps involved in creating sports infographic by applying visualization design objectives.	(8)	CO2	K3

	(ii)	Explain the role of widgets in data visualization.	(4)	CO1	K2
	(iii)	Distinguish between data presentation and data representation.	(4)	CO1	K2
6.	(i)	Apply the stages of data visualization to Zip code data of U.S. Census Bureau and explain the steps.	(8)	CO2	K3
	(ii)	Differentiate horizontal and vertical bar charts.	(4)	CO1	K2
	(iii)	Summarize the advantages of using Tableau for visualization	(4)	CO1	K2
7.	(i)	Construct a visualization framework for weather data.	(8)	CO2	K3
	(ii)	Illustrate the properties of static visualization.	(4)	CO2	K3
	(iii)	Identify the best practices for using pie chart.	(4)	CO2	K3
8.	(i)	Build a simple visualization model for medical industry.	(8)	CO2	K3
	(ii)	Show the steps in exploring geographic data in Tableau.	(4)	CO2	K3
	(iii)	Apply exploratory data visualization principles and sketch two visualization models.	(4)	CO2	K3
9.	(i)	Apply visualization design objectives and construct a workflow model using Tableau.	(10)	CO2	K3
	(ii)	Discuss the purpose of data visualization in business.	(3)	CO1	K2
	(iii)	Identify the factors responsible for successful data visualization	(3)	CO1	K2
10.	(i)	Sketch a scatter plot showing negative correlation.	(4)	CO2	K3
	(ii)	Explain data visualization methodology in detail.	(8)	CO1	K2
	(iii)	Discuss the need of data visualization tools.	(4)	CO1	K2
11.	(i)	Describe the visualization ethics to be followed by professional designers.	(9)	CO1	K2

	(ii)	Discuss the advantage of using 3D bar chart.	(4)	CO1	K2
	(iii)	Summarize the importance of data cleaning.	(3)	CO1	K2
12.	(i)	How to create emotional impact while creating data visualization? Explain the steps in detail.	(7)	CO1	K2
	(ii)	Express the data related to height and weight using a visualization chart.	(5)	CO1	K2
	(iii)	Compare static and dynamic data visualization.	(4)	CO1	K2
13.	(i)	Discuss the key factors surrounding the visualization project.	(5)	CO1	K2
	(ii)	Summarize the steps involved while performing data presentation.	(4)	CO1	K2
	(iii)	Describe the need of 'visualization tone' in conveying an info-graphic.	(6)	CO1	K2
14.	(i)	Explain the initial three stages of data visualization.	(6)	CO1	K2
	(ii)	Apply data visualization principle and illustrate the process in finance application.	(6)	CO2	K3
	(iii)	Demonstrate the working of chart that works by the principle of "compare parts of a whole".	(4)	CO2	K3
15.	(i)	Illustrate the steps involved in creating infographics using Tableau.	(7)	CO2	K3
	(ii)	Discuss the method of using colors to refine a representation.	(4)	CO1	K2
	(iii)	Explain the characteristics of outliers.	(5)	CO1	K2
16	(i)	Apply the principles of heat map and create a visualization nodel.	(8)	CO2	K3
	(ii)	Compare data science and data analytics.	(4)	CO1	K2
	(iii)	Explain the role of Machine learning in data visualization.	(4)	CO1	K2
17	(i)	Summarize the working of line chart.	(6)	CO2	K3
	(ii)	Outline the programming languages used for visualizing data.	(6)	CO1	K2

	(iii)	Discuss the demerits of static visualization.	(4)	CO1	K2
18	(i)	Construct 2D and 3D pie chart.	(6)	CO2	K3
	(ii)	Illustrate the steps in establishing the intent in data visualization process.	(6)	CO2	K3
	(iii)	Show two open source tool used for data visualization.	(4)	CO1	K2
19	(i)	Explain the steps in visualizing geographical data.	(5)	CO1	K2
	(ii)	Apply data visualization principle to illustrate the working of highlight table.	(7)	CO2	K3
	(iii)	Identify the features of Tableau and D3.js	(4)	CO2	K3
20	(i)	Differentiate traditional BI tools and Tableau	(5)	CO2	K3
	(ii)	Illustrate the characteristics of interactive data visualization.	(4)	CO1	K2
	(iii)	Summarize the purpose of data visualization.	(7)	CO1	K2
21	(i)	Identify the design options of data visualization.	(8)	CO2	K3
	(ii)	Show the impact of proper data representation.	(4)	CO2	K3
	(iii)	Show a bar chart with 2D effect.	(4)	CO1	K2
22	(i)	Prepare a data visualization model for analyzing a country's budget.	(8)	CO2	K3
	(ii)	Discuss the importance of data preprocessing.	(4)	CO1	K2
	(iii)	Summarize the properties of gantt chart.	(4)	CO1	K2
23	(i)	Discuss the data visualization process flow.	(8)	CO1	K2
	(ii)	Is Excel a data visualization tool? Infer the valid points.	(4)	CO1	K2
	(iii)	Interpret the data types supported by Tableau.	(4)	CO2	K3

24	(i)	Classify the steps involved in data visualization using medical dataset.	(10)	CO1	K2
	(ii)	Show the steps in creating interactive dashboard in Tableau.	(3)	CO1	K2
	(iii)	Discuss the role of animation in visualizing data.	(3)	CO1	K2
25	(i)	Illustrate the steps involved in analyzing Olympic results visually.	(10)	CO2	K3
	(ii)	Compare Microsoft power BI and Tableau.	(3)	CO2	K3
	(iii)	Describe two principles of data analytics.	(3)	CO1	K2
26	(i)	Explain the impact of cost and time pressures involved in data visualization project.	(8)	CO1	K2
	(ii)	Summarize the ways to create aesthetics in visualizing data.	(4)	CO1	K2
	(iii)	Differentiate column chart and bar chart.	(4)	CO1	K2
27	(i)	Explain the impact of client pressure and technical capabilities involved in data visualization project.	(8)	CO1	K2
	(ii)	Show a data visualization model that portrays happy tone.	(4)	CO1	K2
	(iii)	Discuss the steps in data presentation.	(4)	CO1	K2
28	(i)	Indicate one example on correlation of data visualization.	(7)	CO2	K3
	(ii)	Compare the features of various data visualization tools.	(5)	CO1	K2
	(iii)	Identify the limitation of using more colors in visualization.	(4)	CO1	K2
29	(i)	Explain about the benefits of interactive data visualization.	(8)	CO1	K2
	(ii)	Identifythe data formats used in Tableau.	(4)	CO1	K2
	(iii)	Summarize the steps involved in capturing relationship between two variables using visualization.	(4)	CO1	K2

30	(i)	Apply the logic of explanatory data visualization and create a model.	(7)	CO2	K3
	(ii)	Discuss the steps to analyse population data using visualization chart.	(4)	CO1	K2
	(iii)	Explain the need of statistics in data visualization.	(5)	CO1	K2

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MODULE II

Part-A

1.	State the properties of heat map.	CO1	K1
2.	List the role of Node-link graph.	CO1	K1
3	What is predictive analytics?	CO1	K1
4.	When should you use a map to represent your data?	CO1	K2
5.	Give an example of Time-series data visualization.	CO1	K2
6.	Indicate the importance of hierarchical visualization.	CO1	K2
7.	Write the properties of Choropleth map.	CO1	K2
8.	What are the limitations of using dark font in visualization?	CO1	K2
9.	Indicate two software tools used for Data visualization.	CO1	K2
10.	Why is data visualization important in data science?	CO1	K2
11.	State the properties of Node-link graph.	CO1	K1
12.	List the limitation of heat map.	CO1	K1
13.	What is data analytics?	CO1	K1
14.	When should you use a map to represent your data?	CO1	K2
15.	Give two examples for time series data.	CO1	K2
16.	Indicate the importance of graph data structure in data visualization.	CO1	K2

17.	Write the role of non-space filling method.	CO1	K2
18.	What is the role of DV in health industry with respect to COVID data analysis?	CO1	K2
19.	Indicate two open source tools used for visual analysis.	CO1	K2
20.	Identify two advantages of Big data visualization.	CO1	K2
21.	List the need of geographic data.	CO1	K1
22.	What is mapping in data visualization?	CO1	K1
23.	What is Infographic?	CO1	K1
24.	Which charts are used for time series data?	CO1	K2
25.	Give two disadvantages of static data visualization.	CO1	K2
26.	Indicate the importance of detecting anomalies in time-series dataset.	CO1	K2
27.	Write the importance of data science in health industry.	CO1	K2
28.	Differentiate tree and graph.	CO1	K2
29.	Can animations be used in Tableau? Justify.	CO1	K2
30	What is the usage of trend line in a graph?	CO1	K2
31	What is overlapping area chart?	CO1	K1
32	List two best practices while using area chart.	CO1	K1
33	State the properties of pivot table.	CO1	K1
34	What is filter in pivot table?	CO1	K1
35	Differentiate geo graph and link graph.	CO1	K2
36	Give an example of scatter map.	CO1	K2
37	Give two examples of graph data structure.	CO1	K2
38	Define tree.	CO1	K1
39	List the properties of recursion.	CO1	K1
40	Differentiate line chart and area chart.	CO1	K2
41	Indicate two important features of tree map.	CO1	K2

42	Give an example of force-directed graph.	CO1	K2
43	Define planar graph.	CO1	K1
44	Why hierarchical data is used in data visualization?	CO1	K2
45	What is flow map?	CO1	K1
46	List the importance of geo-spatial map.	CO1	K1
47	Differentiate latitude and longitude in map.	CO1	K2
48	List the components of time-series analysis.	CO1	K1
49	Give two examples of matrix representation of graph.	CO1	K2
50	What is the latest software version in Tableau?	CO1	K1

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MODULE II

Part-B

1.	(i)	Illustrate the different methods and functions used for implementing time-series chart.	(6)	CO2	K3
	(ii)	Construct an area chart showing a comparison of cats and dogs in a certain rescue over a period of 10 years.	(4)	CO2	K3
	(iii)	Build the properties of space filling and non-space filling methods.	(6)	CO2	K3
2.	(i)	Apply the features of Tableau tool and show the working of Tree map in detail.	(10)	CO2	K3
	(ii)	Identify the relation between connected and bi-connected graph.	(3)	CO2	K3
	(iii)	Illustrate the advantages of using Tableau for creating Infographic.	(3)	CO2	K3
3.	(i)	Compare the merits and demerits of using scatter plot for data pattern identification.	(6)	CO3	K4
	(ii)	Analyse the significance of using tree map in data visualization.	(4)	CO3	K4
	(iii)	Categorize the methods of representing graph visually.	(6)	CO3	K4
4.	(i)	Analyze the importance of geo graph.	(3)	CO3	K4
	(ii)	Classify the maps used for geographic data analysis.	(3)	CO3	K4
	(iii)	Infer the steps in creating Pivot table for a small business entity.	(10)	CO3	K4
5.	(i)	Illustrate the steps involved in Tableau to forecast unemployment for a state in each quarter.	(8)	CO2	K3

	(ii)	Sketch a stacked area chart.	(4)	CO2	K3
	(iii)	Construct a chart using space filling method.	(4)	CO2	K3
6.	(i)	Apply data visualization technique to display hierarchical data as a set of nested rectangles and show the formulated steps.	(8)	CO2	K3
	(ii)	Construct a plot with positive correlation.	(4)	CO2	K3
	(iii)	Construct Infographic data visualization.	(4)	CO2	K3
7.	(i)	Compare the merits and demerits of exploring data in maps.	(5)	CO3	K4
	(ii)	Analyze the significance of using matrix representation in graphs.	(5)	CO3	K4
	(iii)	Categorize the types of scatter plot.	(6)	CO3	K4
8.	(i)	Categorize the importance of animation in data visualization.	(8)	CO3	K4
	(ii)	Classify the maps used for geographic data analysis.	(4)	CO3	K4
	(iii)	Analyze the implications of implementing Pivot table using excel application.	(4)	CO3	K4
9.	(i)	Illustrate the steps involved in creating tree maps.	(10)	CO2	K3
	(ii)	Apply data visualization properties and create an area chart.	(3)	CO2	K3
	(iii)	Construct an adjacent matrix for a graph.	(3)	CO2	K3
10.	(i)	Apply data visualization technique and write a code to generate time-series visualization.	(8)	CO2	K3
	(ii)	Construct charts relevant to geographical data analysis.	(4)	CO2	K3
	(iii)	Construct a scatter chart that denotes null correlation.	(4)	CO2	K3
11.	(i)	i) Compare and contrast the properties of space filling methods.	(8)	CO3	K4
	(ii)	ii) Analyze the impact of “over-plotting”.	(4)	CO3	K4

	(iii)	Categorize the types of correlation principles used in Tableau.	(4)	CO3	K4
12.	(i)	Categorize the steps involved in customizing columns in Pivot table.	(7)	CO3	K4
	(ii)	Classify the programming languages used for data visualization.	(5)	CO3	K4
	(iii)	Analyze the data visualization results obtained for Weather forecasting.	(4)	CO3	K4
13.	(i)	Discuss the charts utilized for analyzing time-series data.	(7)	CO1	K2
	(ii)	Summarize the steps involved while performing connections and correlations.	(4)	CO1	K2
	(iii)	Describe the need of node-link graph.	(5)	CO1	K2
14.	(i)	Explain the steps in exploring geographical data.	(4)	CO1	K2
	(ii)	Apply data visualization principle and write a code to sketch a time-series plot.	(5)	CO2	K3
	(iii)	Demonstrate the code for implementing tree map.	(7)	CO2	K3
15.	(i)	Illustrate the steps involved in geographical data analysis.	(7)	CO2	K3
	(ii)	Discuss Hierarchies and Recursion in data visualization.	(5)	CO1	K2
	(iii)	Explain the role of mapping.	(4)	CO1	K2
16	(i)	Apply the principles of data visualization and create rainfall prediction model.	(8)	CO2	K3
	(ii)	Compare tree map and heat map.	(4)	CO1	K2
	(iii)	Explain the role of “line of best fit”.	(4)	CO1	K2
17	(i)	Demonstrate the features of time series analysis and forecasting in Tableau.	(6)	CO2	K3
	(ii)	Show the types of scatter map.	(6)	CO1	K2
	(iii)	Discuss the merits of spider map.	(4)	CO1	K2

18	(i)	Compare density plot and box plot.	(6)	CO2	K3
	(ii)	Illustrate the steps in creating visualization of quantitative metric distributed geographically.	(6)	CO2	K3
	(iii)	Infer two software used for data modeling.	(4)	CO1	K2
19	(i)	Explain the steps in creating adjacency matrix.	(5)	CO1	K2
	(ii)	Apply data visualization principle to illustrate the interpretation of area chart in Tableau.	(7)	CO2	K3
	(iii)	Compare cluster map and choropleth map.	(4)	CO2	K3
20	(i)	Differentiate Plotly and Tableau	(6)	CO2	K3
	(ii)	List the characteristics of predictive modeling.	(6)	CO1	K2
	(iii)	Summarize the purpose of displaying in geo graph.	(4)	CO1	K2
21	(i)	Formulate the steps in creating time-series visualization.	(8)	CO2	K3
	(ii)	Show the example of visualizing hierarchies with a simple node-link diagram	(4)	CO2	K3
	(iii)	Construct discrete area chart.	(4)	CO2	K3
22	(i)	Prepare a data visualization model for analyzing various food products.	(8)	CO2	K3
	(ii)	Discuss the importance of AI in data visualization.	(4)	CO1	K2
	(iii)	Summarize the properties of topographic map.	(4)	CO1	K2
23	(i)	Discuss the code for creating map based visualization.	(8)	CO1	K2
	(ii)	Illustrate the technique behind cone tree.	(4)	CO2	K3
	(iii)	Identify the type of data sources supported by Tableau.	(4)	CO2	K3

24	(i)	Classify the steps involved in displaying data in nested rectangles.	(10)	CO1	K2
	(ii)	Show the steps in creating worksheet in Tableau.	(3)	CO1	K2
	(iii)	Discuss the role of "Processing tool".	(3)	CO1	K2
25	(i)	Illustrate the steps involved in analyzing cricket match statistics using visualization.	(10)	CO2	K3
	(ii)	Explain the advantage of using "Tableau public version".	(3)	CO1	K2
	(iii)	Describe the approaches of outlier detection.	(3)	CO1	K2
26	(i)	Explain the method of creating axis label for time-series chart.	(8)	CO1	K2
	(ii)	Discuss different data types in Tableau used for geographic data analysis.	(4)	CO1	K2
	(iii)	Differentiate worksheet and dashboard in Tableau.	(4)	CO1	K2
27	(i)	Explain the steps in anomaly detection.	(8)	CO1	K2
	(ii)	Indicate a data visualization model for plotting Office Temperature (F) vs. Time(days).	(4)	CO1	K2
	(iii)	Discuss the steps in temporal visualization.	(4)	CO1	K2
28	(i)	Formulate one example on statistical visualization.	(7)	CO2	K3
	(ii)	Compare the features of various maps utilized in Tableau.	(5)	CO1	K2
	(iii)	Summarize the methods of representing graphs in pictorial form.	(4)	CO1	K2
29	(i)	Explain the role of data interpreter in Tableau.	(6)	CO1	K2
	(ii)	Discuss correlation principles.	(4)	CO1	K2
	(iii)	Summarize the steps involved in exploring storm data in visual form.	(6)	CO1	K2
30	(i)	Apply the logic of space filling method and infer a visualization model for manufacturing industry.	(7)	CO2	K3

(ii)	Discuss the steps involved in creating of visual analysis of COVID spread.	(4)	CO1	K2
(iii)	Explain the role of deep learning in data visualization	(5)	CO1	K2

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MODULE III

Part-A

1.	State the features of D3.js	CO1	K1
2.	List the role of HTML in D3.js	CO1	K1
3	What is DOM manipulation?	CO1	K1
4.	List the advantages of D3.js	CO1	K1
5.	What is stream graph?	CO1	K1
6.	Indicate the importance of data binding.	CO1	K2
7.	Write the relation between d3.scaleLinear( ) and d3.scaleLog( )	CO1	K2
8.	Which method is used to create top horizontal axis?	CO1	K1
9.	What is SVG?	CO1	K1
10.	Differentiate d3.axisBottom() and d3.axisLeft()	CO1	K2
11.	What is ordinal scale?	CO1	K1
12.	Differentiate selection.transition() and transition.duration()	CO1	K2
13.	List the role of d3.selection.transition() method.	CO1	K1
14.	Give an example of data binding.	CO1	K2
15.	What is delay() function in d3.js	CO1	K1

16.	Indicate the need of randomizing data.	CO1	K2
17.	Define CSS.	CO1	K1
18.	List any two data visualization tools similar to d3.js.	CO1	K1
19.	What are the limitations of d3.js?	CO1	K1
20.	Indicate the role of data forecasting.	CO1	K2
21.	List the need of data color formatting.	CO1	K1
22.	What is workbook formatting?	CO1	K1
23.	Write the function of d3.arc()	CO1	K1
24.	List two best practices while using circle packing.	CO1	K1
25.	Give two examples of showing trend line.	CO1	K2
26.	What are Calculated fields in Tableau?	CO1	K1
27.	Differentiate web server and web browser.	CO1	K2
28.	Differentiate storyboard and dashboard.	CO1	K2
29.	Indicate the role of "story point".	CO1	K2
30	Define story workspace.	CO1	K1
31	What is the role of filters in Tableau?	CO1	K1
32	List the advantage of Power BI.	CO1	K1
33	How to extract reports from Power BI?	CO1	K1
34	What is worksheet in Tableau?	CO1	K1
35	Define map dashboard.	CO1	K1
36	How do I customize tooltip in Tableau?	CO1	K2
37	Give two examples of creating 'legends' in chart.	CO1	K2
38	Define annotations.	CO1	K1
39	List the properties of storyboard.	CO1	K1
40	Differentiate Tableau desktop and Tableau public.	CO1	K2

41	Indicate the methods of assessing trend in a quantitative data.	CO1	K2
42	Give an example of outlier in a data source.	CO1	K2
43	Define Literal expressions.	CO1	K1
44	Write the syntax of SUM function in Tableau.	CO1	K2
45	What is ZN function?	CO1	K1
46	List the operators used in Tableau.	CO1	K1
47	What is literal expressions in Tableau calculations?	CO1	K1
48	Differentiate String Literals and Date Literals.	CO1	K2
49	When to use calculations in Tableau?	CO1	K2
50	What is exponential smoothing?	CO1	K1

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KARPAGAM
COLLEGE OF ENGINEERING
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(An ISO 9001:2015 and ISO 14001:2015 Certified Institution)

MODULE III

Part-B

1.	(i)	Illustrate the steps involved in creating scale using D3.js	(8)	CO2	K3
	(ii)	Explain the need of interactivity in data visualization.	(4)	CO1	K2
	(iii)	Discuss the role of business intelligence tools.	(4)	CO1	K2
2.	(i)	Illustrate the stages involved in creating axes using D3.js	(8)	CO2	K3
	(ii)	Indicate the features of transition and motion.	(4)	CO1	K2
	(iii)	Show the properties of D3.js	(4)	CO1	K2
3.	(i)	Sketch a chart using the principles of D3.js	(6)	CO2	K3
	(ii)	Identify the limitations of animated charts.	(4)	CO2	K3
	(iii)	Illustrate the steps for changing the background color using D3.js	(6)	CO2	K3
4.	(i)	Explain domain and range used for creating scales.	(6)	CO1	K2
	(ii)	Construct a visualization framework using d3.scaleOrdinal()	(4)	CO2	K3
	(iii)	Apply the visualization design principles and write a code to generate bar chart with scale.	(6)	CO2	K3

5.	(i)	Illustrate the steps involved in adding x axis to a graph using D3.	(8)	CO2	K3
	(ii)	Explain d3.axisLeft() function	(4)	CO1	K2
	(iii)	Distinguish between CSS and Java script	(4)	CO1	K2
6.	(i)	Apply the principles of D3.js and show the working of delay() function with a code.	(8)	CO2	K3
	(ii)	Differentiate d3.select() and d3.selectAll()	(4)	CO1	K2
	(iii)	Summarize the advantages of using D3.js	(4)	CO1	K2
7.	(i)	Explain Scalable Vector Graphics.	(8)	CO1	K2
	(ii)	Illustrate the properties of DOM Manipulation.	(4)	CO2	K3
	(iii)	Identify the best practices for using D3 to create visualizations.	(4)	CO2	K3
8.	(i)	Build a simple visualization model for healthcare industry using implementation code.	(8)	CO2	K3
	(ii)	Show the steps in exploring transition() function.	(4)	CO2	K3
	(iii)	Apply data visualization principles and sketch two visualization models using D3.js.	(4)	CO2	K3
9.	(i)	Explain animated bar chart and its implementation process.	(10)	CO2	K3
	(ii)	Discuss the purpose of web based data visualization.	(3)	CO1	K2
	(iii)	Identify the steps for styling SVG elements.	(3)	CO1	K2
10.	(i)	Sketch a chart using d3.pie() function.	(5)	CO2	K3
	(ii)	Explain event handling.	(4)	CO1	K2
	(iii)	Discuss the methods used in d3.js	(7)	CO1	K2

11.	(i)	Describe the role of calculated fields in Tableau.	(9)	CO1	K2
	(ii)	Discuss the advantage of Table calculations in Tableau.	(4)	CO1	K2
	(iii)	Summarize the generating reports from visualization tools.	(3)	CO1	K2
12.	(i)	How to convert a string to a date using calculated fields? Explain.	(7)	CO1	K2
	(ii)	Discuss the method of transforming values in visualization.	(5)	CO1	K2
	(iii)	Compare Basic and LOD expression.	(4)	CO1	K2
13.	(i)	Compare and contrast the features of Tableau story board.	(5)	CO3	K4
	(ii)	Analyze the method of customizing tooltips.	(4)	CO3	K4
	(iii)	Categorize the calculation types used in Tableau.	(6)	CO3	K4
14.	(i)	Analyze the results of stock market forecasting.	(6)	CO3	K4
	(ii)	Point out the special features used only in Tableau desktop version.	(6)	CO3	K4
	(iii)	Categorize the types of color formatting.	(4)	CO3	K4
15.	(i)	Infer story board visualization for Tsunami analysis.	(7)	CO3	K4
	(ii)	Analyze the components of interactive dashboard for disease prediction.	(4)	CO3	K4
	(iii)	Point out the essential features of visualization model for tax calculation of a new financial year.	(5)	CO3	K4
16	(i)	Apply the principles of Tableau to explore additional data details using tooltips.	(8)	CO2	K3
	(ii)	Compare Format titles and captions.	(4)	CO1	K2
	(iii)	How to hide titles in dashboard? Explain.	(4)	CO1	K2

17	(i)	Summarize the features of granularity and trimming.	(6)	CO2	K3
	(ii)	List the usage of data aggregation.	(6)	CO1	K2
	(iii)	Discuss the demerits of predictive modeling.	(4)	CO1	K2
18	(i)	Compare workbook formatting and worksheet formatting.	(6)	CO2	K3
	(ii)	Illustrate the steps in changing workbook theme.	(6)	CO2	K3
	(iii)	List two examples of trend analysis.	(4)	CO1	K2
19	(i)	Explain the steps in creating dashboard for analyzing performance of a college.	(5)	CO1	K2
	(ii)	Apply design tricks and sketch a chart with interactive visualization.	(7)	CO2	K3
	(iii)	Discuss the method of adding views to the dashboard.	(4)	CO1	K2
20	(i)	List the importance of BI visualization.	(5)	CO1	K2
	(ii)	Discuss the rules for creating dashboard layout for different devices.	(4)	CO1	K2
	(iii)	Summarize the purpose of dashboard extensions.	(7)	CO1	K2
21	(i)	Describe the design options of data visualization.	(8)	CO2	K3
	(ii)	Show the impact of proper data representation.	(4)	CO2	K3
	(iii)	Sketch a bar chart with 2D effect.	(4)	CO1	K2
22	(i)	Prepare the implementation steps for creating axes in a chart.	(8)	CO2	K3
	(ii)	Discuss the importance of using transition.	(4)	CO1	K2
	(iii)	Summarize the importance of creating custom calculations in Tableau.	(4)	CO1	K2
23	(i)	Discuss the ways and means to create animation using D3.js	(8)	CO1	K2
	(ii)	What are the different Tableau products available in the market?	(4)	CO1	K2

	(iii)	List the demerits of Tableau.	(4)	CO1	K2
24	(i)	Explain Moving calculations.	(10)	CO1	K2
	(ii)	List the steps in creating drawing using data.	(3)	CO1	K2
	(iii)	Discuss the role of trend line in analyzing a chart.	(3)	CO1	K2
25	(i)	Illustrate the steps involved in analyzing American presidential election using Infographics.	(10)	CO2	K3
	(ii)	Compare different ways of connecting data in Tableau.	(3)	CO2	K3
	(iii)	Discuss the feature of temporal granularity.	(3)	CO1	K2
26	(i)	Explain the steps to create scales and axes in a visualization framework	(8)	CO1	K2
	(ii)	List the methods used for data forecasting.	(4)	CO1	K2
	(iii)	Differentiate .twb and .twbx extension.	(4)	CO1	K2
27	(i)	Differentiate disaggregation and aggregation of data.	(5)	CO1	K2
	(ii)	Sketch a dual axis chart.	(4)	CO1	K2
	(iii)	Discuss the steps in creating story in Tableau.	(7)	CO1	K2
28	(i)	Indicate the steps in creating story point.	(7)	CO2	K3
	(ii)	Discuss the property of blended axis.	(5)	CO1	K2
	(iii)	List the limitation of using story board.	(4)	CO1	K2
29	(i)	Differentiate COUNT function and COUNTD function.	(8)	CO1	K2
	(ii)	Apply interactivity function and create dashboard for Telemedicine analytics.	(4)	CO2	K3
	(iii)	Sketch a storyboard with minimum features.	(4)	CO2	K3

30	(i)	Differentiate MAX function and MIN function.	(7)	CO1	K2
	(ii)	Illustrate three applications of interactive data visualization.	(4)	CO2	K3
	(iii)	Compare discrete field and continuous field in Tableau.	(5)	CO1	K2

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