

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3160717

Date: 26-05-2025

Subject Name: Data Visualization

Time: 10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What is AJAX in context of data reading? Explain use of it with an example.	03
	(b) Write the steps of styling your data using XSLT taking example data of your choice..	04
	(c) What are Charting Primitives? Explain any three chart types with example of each.	07
Q.2	(a) Explain the reading and displaying of the JSON content in brief.	03
	(b) What is linear interpolation? How it is important in Charting?	04
	(c) Explain the difference between <canvas> tag and SVG.	07
<b>OR</b>		
	(c) What is Google API? Write HTML code to display a pie chart of “Product Sales” using Google APIs.	07
Q.3	(a) Explain the significance of D3 using various application instances.	03
	(b) Explain Nested Selections in D3.	04
	(c) Explain how to use the HTML5 canvas to render dynamic column charts in brief.	07
<b>OR</b>		
Q.3	(a) Explain Selection in D3.	03
	(b) Explain Data Joining in D3.	04
	(c) How Chart Animations work? Explain with an example of Google Chart APIs.	07
Q.4	(a) Explain the importance of update, enter, and exit function in D3.	03
	(b) Explain interactive buttons with suitable example.	04
	(c) How to add Play button to the page? Explain with example.	07
<b>OR</b>		
Q.4	(a) Explain use of DOM in D3.	03
	(b) How can you interrupt a play button? Explain with an example code.	04
	(c) What are transitions? How they work? How they can be chained together?	07
Q.5	(a) Explain designing of bullet graph.	03
	(b) Explain the advantages of using Graphics_Library of graphs in brief.	04
	(c) What are dashboard design issues and assessment of needs?	07
<b>OR</b>		
Q.5	(a) Explain designing of sparkline graph.	03
	(b) Explain the characteristics of a well designed dashboard.	04
	(c) Explain the critical design practices in detail.	07

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# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024

Subject Code:3160717

Date:20-05-2024

Subject Name:Data Visualization

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
<b>Q.1</b> (a) What is Data visualization? How it is used in real time world?	<b>03</b>
(b) What are the keys factors for Data visualization? Explain in short.	<b>04</b>
(c) What is Google API? Explain how it can be used in data visualization? Explain it with examples.	<b>07</b>
<b>Q.2</b> (a) Differentiate: (1) Canvas Vs SVG (2) JSON Vs XML	<b>03</b>
(b) Write down a code for reading and displaying .txt file.	<b>04</b>
(c) How do you assure maximum readability? Explain it with example.	<b>07</b>
<b>OR</b>	
(c) What is DOM? Write a code to read student XML file and display on the browser.	<b>07</b>
<b>Q.3</b> (a) What is Bar chart? Explain it in short.	<b>03</b>
(b) Explain Bubble Chart in short.	<b>04</b>
(c) What is Semantic table? Explain it with suitable example	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) What is Pie chart? Explain it in short.	<b>03</b>
(b) Write down a code for reading and displaying JSON file.	<b>04</b>
(c) Write down code to display Line chart and Area chart. Explain it.	<b>07</b>
<b>Q.4</b> (a) Write a short note: D3.js	<b>03</b>
(b) Explain Data join of D3.js with suitable example.	<b>04</b>
(c) Explain Various Functions of D3.js with example code.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Write a short note: XML	<b>03</b>
(b) What is an Asynchronous request? How do you deal with it.	<b>04</b>
(c) Write a code snippet to demonstrate animation on the page.	<b>07</b>
<b>Q.5</b> (a) What is Spark line? Explain in short.	<b>03</b>
(b) What is an interactive button? Explain with example.	<b>04</b>
(c) Draw an information dashboard of any hypothetical University.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) What is Information dashboard?	<b>03</b>
(b) What are advantages of Graphics library?	<b>04</b>
(c) Explain all issues related in designing Dashboard in detail.	<b>07</b>

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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3160717****Date:10-07-2023****Subject Name:Data Visualization****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	<b>MARKS</b>
<b>Q.1</b> (a) Define: (1) Data Point (2) Scale (3) Infographics	<b>03</b>
(b) Discuss the real applications of data visualization in short.	<b>04</b>
(c) Write a code to display both Pie chart and Column chart using Google API in single browser window.	<b>07</b>
<b>Q.2</b> (a) Differentiate CSV Vs JSON files.	<b>03</b>
(b) Write down a code for reading and displaying csv file using JQuery.	<b>04</b>
(c) Explain linear gradient and radial gradient of HTML5 Canvas with example.	<b>07</b>
<b>OR</b>	
(c) Write down a code to display a typical Exam Schedule Time Table with CSS.	<b>07</b>
<b>Q.3</b> (a) What is D3.js? Explain in short.	<b>03</b>
(b) Explain Candlestick Charts in short.	<b>04</b>
(c) Define Data Binding. Also explain different uses of append(), text(), selectAll() (using class,id).	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Differentiate text file with XML file	<b>03</b>
(b) Write a suitable code to demonstrate dynamic highlighting.	<b>04</b>
(c) Write down a code to animate a Rectangle using Canvas API.	<b>07</b>
<b>Q.4</b> (a) What is Data joins? Explain it in short.	<b>03</b>
(b) What is interactive button. Explain it in short.	<b>04</b>
(c) Write a code that uses the join() method to merge the two datasets and create a new dataset that includes both the datasets.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) What is sequence w.r.t data visualization?	<b>03</b>
(b) Write down a code snippet that demonstrate transaction w.r.t data visualization.	<b>04</b>
(c) Write a code snippet that adds a Play button to the page.	<b>07</b>
<b>Q.5</b> (a) What is eloquence? Explain in short.	<b>03</b>
(b) How do you update charts ? Explain in short.	<b>04</b>
(c) What is information Dashboard? Create a sketch/wireframe of any hypothetical Engineering College.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) What is Bullet graph?	<b>03</b>
(b) Explain Critical Design Practices w.r.t data visualization?	<b>04</b>
(c) What are different considerations associated with visual presentation of information dashboard. Explain all in detail.	<b>07</b>

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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160717****Date:06/06/2022****Subject Name:Data Visualization****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Define following Term : Visualization, Filtering, Axes **03**  
 (b) Differentiate following: **04**  
       1) Canvas and SVG  
       2) Linear Scale and Ordinal Scale  
 (c) How to work with Google API? Give an example of pie chart in Google API **07**
- Q.2** (a) What is XSLT? Explain with example. **03**  
 (b) Write a code to read CSV file and display its content on the browser **04**  
 (c) Define Document Object Model (DOM). Write a code to Read a XML file and display its content on the browser. **07**
- OR**
- (c) Define DTD, Explain XML syntax with example. **07**
- Q.3** (a) Define Data binding. What is the use of text( ). **03**  
 (b) What is the Transaction? How to apply Transaction? **04**  
 (c) Explain bar chart, pie chart, line chart, bubble chart with example. **07**
- OR**
- Q.3** (a) Differentiate between .xml file and .csv file **03**  
 (b) How to read JSON file? Explain with example. **04**  
 (c) Explain Data points and XY chart with example **07**
- Q.4** (a) How to use selection in D3.js? **03**  
 (b) Explain select and append command in D3.js with example **04**  
 (c) Explain data-joins in D3.js with example. **07**
- OR**
- Q.4** (a) Describe the changing method of D3.js with example. **03**  
 (b) Explain Select all and exit command in D3.js with example. **04**  
 (c) Explain Various Functions in D3.js **07**
- Q.5** (a) Explain syntax of polygon and poly points in canvas with example. **03**  
 (b) How to make interactive button? Explain with example. **04**  
 (c) Explain Dashboard with example. **07**
- OR**
- Q.5** (a) Differentiate between Linear Scale and Ordinal Scale. **03**  
 (b) How to add Play button to the page? Explain with example. **04**  
 (c) What are the key Factors of Data Visualization? **07**

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