

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI EXAMINATION – WINTER 2025

Subject Code:3160717

Date:19-11-2025

Subject Name:Data Visualization

Time:02:30 PM TO 05:00 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) Explain any three key factors data visualization.	<b>03</b>
(b) Describe data visualization and it's any three applications.	<b>04</b>
(c) Explain HTML5 canvas with example. Explain code to draw linear & circular gradient, using HTML 5 canvas.	<b>07</b>
<b>Q.2</b> (a) Describe how to read data from text file and display in table using jquery.	<b>03</b>
(b) Differentiate native vs javascript validation.	<b>04</b>
(c) Explain XSLT with example.	<b>07</b>
<b>OR</b>	
(c) Explain with example JQuery validation engine using four different validation rules.	<b>07</b>
<b>Q.3</b> (a) Describe dynamic highlighting with example.	<b>03</b>
(b) Explain CSS-style selectors with example.	<b>04</b>
(c) Explain XML and how to read data from XML file with example and draw bar chart from it.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Differentiate server side vs client side validation	<b>03</b>
(b) Explain HTML 5 inputs with example.	<b>04</b>
(c) Explain CSV and how to read data from CSV file with example and draw pie chart from it.	<b>07</b>
<b>Q.4</b> (a) Explain interruption of the play action?	<b>03</b>
(b) Describe interactive button with example.	<b>04</b>
(c) Explain transition(), data() and append() functions with example.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Explain steps to create and upload data in D3 js.	<b>03</b>
(b) Describe animation with example.	<b>04</b>
(c) Explain join(), enter() and attr() functions with example.	<b>07</b>
<b>Q.5</b> (a) Explain click(), each(), and text() jquery functions.	<b>03</b>
(b) List and explain advantage of graphics library of graph to create a dashboard.	<b>04</b>
(c) Explain dashboard and it's real world example.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) Explain ajax with example.	<b>03</b>
(b) Explain the use of dashboard with example.	<b>04</b>
(c) Describe dashboard design issues and how to solve it .	<b>07</b>

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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024****Subject Code:3160717****Date:28-11-2024****Subject Name:Data Visualization****Time:02:30 PM TO 05:00 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) What is Infographics explain with example	<b>03</b>
	(b) Describe Simultaneous acquisition and visualization.	<b>04</b>
	(c) What is charting Primitives? List all types of Charts and explain bar Chart and line Chart.	<b>07</b>
<b>Q.2</b>	(a) Explain linear gradient and radial gradient in canvas.	<b>03</b>
	(b) Why is HTML5 so important to data visualization?	<b>04</b>
	(c) How to use the HTML5 canvas to render dynamic column charts?	<b>07</b>
<b>OR</b>		
	(c) How to use the Google Charts API to render a column chart for University result data of various subjects.	<b>07</b>
<b>Q.3</b>	(a) How to read XML file? Explain with example.	<b>03</b>
	(b) Explain CSS-style selectors with example.	<b>04</b>
	(c) How to use the Google Charts API to render a Pie chart for Election data of various states.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) How to read JSON file? Explain with example.	<b>03</b>
	(b) How the HTML5 canvas differs from SVG graphics	<b>04</b>
	(c) Explain Data points and XY chart with example	<b>07</b>
<b>Q.4</b>	(a) Explain transaction with respect to data visualization	<b>03</b>
	(b) Explain select and append command in D3.js with example	<b>04</b>
	(c) Write a code to demonstrate play button also explain it.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Prepare column chart using the HTML5 canvas.	<b>03</b>
	(b) Explain Select all and exit command in D3.js with example.	<b>04</b>
	(c) Describe Loading and Filtering External Data in data visualization	<b>07</b>
<b>Q.5</b>	(a) How do you update charts?	<b>03</b>
	(b) How to add Play button to the page? Explain with example	<b>04</b>
	(c) What are the key Factors of Data Visualization?	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Explain syntax of polygon and poly points in canvas with example.	<b>03</b>
	(b) How you achieve eloquence? Explain it	<b>04</b>
	(c) What is information Dashboard? Explain various design issues of it	<b>07</b>

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Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2023**

**Subject Code:3160717**

**Date:07-12-2023**

**Subject Name:Data Visualization**

**Time:02:30 PM TO 05:00 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 Visualization (2) Data Point (3) Infographics	<b>03</b>
	(b) Differentiate following:(1) Canvas and SVG (2) HTML and SVG	<b>04</b>
	(c) What is Google API? Write HTML code to display Bar chart using Google APIs.	<b>07</b>
<b>Q.2</b>	(a) Differentiate CSV Vs XML files	<b>03</b>
	(b) Write down code for reading and displaying JSON file using java script.	<b>04</b>
	(c) What is Semantic table? Explain it with suitable example	<b>07</b>
<b>OR</b>		
	(c) Write down code for reading asynchronously and displaying XML file using JQuery.	<b>07</b>
<b>Q.3</b>	(a) What is D3.js? Explain in short.	<b>03</b>
	(b) How do you assure maximum readability using CSS?	<b>04</b>
	(c) Write D3 code to demonstrate data binding and data loading.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Differentiate text file with JSON file	<b>03</b>
	(b) What is dynamic highlighting? Explain it using suitable code example.	<b>04</b>
	(c) How to use selection in D3? Describe chaining method of D3.js using suitable example.	<b>07</b>
<b>Q.4</b>	(a) What is Data joins?	<b>03</b>
	(b) Explain interactive buttons with suitable example.	<b>04</b>
	(c) Write a code to demonstrate play button also explain it.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) What is sequence w.r.t data visualization?	<b>03</b>
	(b) Explain transaction w.r.t data visualization.	<b>04</b>
	(c) Write a code to interrupt the play button also explain it.	<b>07</b>
<b>Q.5</b>	(a) How do you update charts?	<b>03</b>
	(b) How you achieve eloquence? Explain it	<b>04</b>
	(c) What is information Dashboard? Explain various design issues of it.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) What is Bullet graph?	<b>03</b>
	(b) Explain Sparkline?	<b>04</b>
	(c) What are different considerations associated with visual perception of information dashboard.	<b>07</b>

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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160717****Date:15-12-2022****Subject Name:Data Visualization****Time:02:30 PM TO 05:00 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) What is Acquiring and Visualizing Data? **03**  
 (b) Describe Simultaneous acquisition and visualization. **04**  
 (c) What is charting Primitives? List all types of Charts and explain Pie Chart and Area Chart. **07**
- Q.2** (a) Define following terms: Candlestick Charts, Bubble Charts, and Surface Charts. **03**  
 (b) Why is HTML5 so important to data visualization? **04**  
 (c) How to use the HTML5 canvas to render dynamic column charts? **07**
- OR**
- (c) How to use the Google Charts API to render a pie chart for sales data of various electronic devices. **07**
- Q.3** (a) What is Infographics explain with example. **03**  
 (b) How the HTML5 canvas differs from SVG graphics tools. **04**  
 (c) List down installation setup steps of D3. **07**
- OR**
- Q.3** (a) How can we deal with Asynchronous requests? **03**  
 (b) Explain CSS-style selectors with example. **04**  
 (c) How to use the Google Charts API to animate a bar chart? **07**
- Q.4** (a) Which Data formats you can use with D3? **03**  
 (b) Explain Data joins, interactive buttons with examples. **04**  
 (c) Describe Loading and Filtering External Data in data visualization. **07**
- OR**
- Q.4** (a) Prepare column chart using the HTML5 canvas. **03**  
 (b) Explain how you can allow the user to interrupt the play? **04**  
 (c) Explain steps to create and upload data in D3. **07**
- Q.5** (a) Explain Scalable Vector Graphics. **03**  
 (b) Develop Following Program Using HTML5 and Google Chats API and Map API Using Google Charts API Basics draw charts like a Line chart **04**  
 (c) Develop Following Program Using HTML5 and JavaScript Read JSON Data and draw Data Table. **07**
- OR**
- Q.5** (a) Enlist Dashboard design issues in Data Visualization. **03**  
 (b) Develop Following Program Using HTML5 and JavaScript Read the data from XML file and draw Simple Chart **04**  
 (c) Develop Following Program Using HTML5 and D3.js and Canvas.js Showing the Data as a column chart for four age group. **07**

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