

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University)



B. Tech (Eighth Semester - Regular) Examinations, April - 2026

22BCMPE48011 - Big Data Visualization

(CSE-AIML)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

- | | CO # | Blooms
Level |
|--|------|-----------------|
| a. What is redundant encoding? Why is it important in big data visualization? | CO1 | K1 |
| b. Distinguish between informative and persuasive visualizations with examples. | CO1 | K1 |
| c. Briefly explain the reformatting process in R Data Manager with a big data example. | CO2 | K1 |
| d. State the purpose of filters and measure names in dashboard design. | CO3 | K1 |
| e. Differentiate between multiple donut charts and bar chart visualizations in D3 with examples. | CO4 | K1 |

PART – B

(15 x 4 = 60 Marks)

Answer **ALL** the questions

- | | Marks | CO # | Blooms
Level |
|--|-------|------|-----------------|
| 2. a. Explain the major challenges involved in Big Data Visualization. | 8 | CO1 | K1 |
| b. Explain how appropriate visual encoding improves the effectiveness of data visualization. | 7 | CO1 | K2 |

(OR)

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|---|---|-----|----|
| c. Explain the significance of selecting appropriate structure, layout, and axes in visualization. | 8 | CO1 | K1 |
| d. Discuss how visualization techniques can be tailored for informative, persuasive, and artistic purposes. | 7 | CO1 | K2 |
| 3.a. Illustrate how R can be used for big data analysis with an example of patient medical history. | 8 | CO2 | K3 |
| b. Discuss various data quality categories and their impact on visualization outcomes. | 7 | CO2 | K2 |

(OR)

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|---|---|-----|----|
| c. Evaluate the importance of output nodes and their impact on the final visualization results. | 8 | CO2 | K3 |
| d. Demonstrate how output nodes are used and explain their impact on final visualization results with an example. | 7 | CO2 | K2 |
| 4.a. Explain the role of visualization tools in handling big data with suitable examples. | 8 | CO3 | K1 |
| b. Demonstrate the process of analysing sales transactions using visualization tools. | 7 | CO3 | K2 |

(OR)

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|---|---|-----|----|
| c. Describe the process of data wrangling and its importance in visualization. | 8 | CO3 | K1 |
| d. Explain the steps involved in constructing an effective visualization dashboard. | 7 | CO3 | K2 |
| 5.a. Discuss how D3 differs from traditional visualization tools. | 8 | CO4 | K2 |
| b. Analyse the process of adopting and modifying D3 sample templates. | 7 | CO4 | K4 |

(OR)

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|---|---|-----|----|
| c. Discuss the steps involved in creating a summary file for visualization. | 8 | CO4 | K2 |
| d. Analyse the design and application of multiple donut charts. | 7 | CO4 | K4 |

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