PVP 20

Code: 20CS6621

III B.Tech - II Semester – Regular Examinations - APRIL 2024

DATA VISUALIZATION

(HONORS in COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Explain Gibson's Affordance theory and its significance in data visualization.	L1	CO1	7 M
	b)	Describe the attributes of entities and relationships in the context of data visualization, highlighting their importance.	L2	CO1	7 M
OR					
2	a)	Differentiate between the types of attributes used in data visualization and discuss their significance.	L2	CO1	4 M
	b)	List and briefly explain the stages involved in data visualization according to the Foundations for an Applied Science.	L1	CO1	10 M

UNIT-II					
3	a)	Explain the fundamental components of the Visualization Pipeline from both a conceptual and implementation perspective.	L1	CO2	8 M
	b)	Why color mapping is needed in visualization and explain the primary considerations for effective color maps.	L1	CO1	6 M
OR					
4	a)	Recall the key elements involved in Scalar Visualization and describe their significance in data representation.	L1	CO3	7 M
	b)	Explain the significance of choosing appropriate color schemes in designing effective color maps.	L2	CO2	7 M
UNIT-III					
5	a)	Define vector glyphs and Identify the key principles behind vector color coding in data visualization.	L1	CO2	7 M
	b)	Compare and contrast different methods for grid construction from scattered points.	L2	CO3	7 M
OR					
6	a)	What is Texture-Based Vector Visualization? Provide a brief overview of its key characteristics and applications.	L1	CO3	7 M
	b)	Design a grid construction strategy for a given set of scattered points, considering specific constraints and requirements.	L3	CO2	7 M

UNIT-IV					
7	a)	Explain the significance of choosing appropriate image data representation methods in the context of efficient image processing.	L2	CO2	7 M
	b)	Demonstrate how shape representation techniques can be applied to enhance image visualization.	L3	CO3	7 M
OR					
8	a)	Compare and contrast various image visualization techniques, highlighting their unique applications and advantages.	L2	CO2	7 M
	b)	Explain the key techniques used for shape analysis in image processing.	L1	CO2	7 M
UNIT-V					
9	a)	Illustrate the significance of representing relationships through Visualization of Relations in data analysis.	L2	CO3	7 M
	b)	Assess the challenges associated with Text Visualization, considering factors such as scalability, interpretability, and usability.	L3	CO4	7 M
OR					
10	a)	Define the term "Infovis" and describe key features of Table Visualization in information visualization.	L1	CO4	7 M

	b)	Compare and contrast Multivariate Data Visualization and Text Visualization, highlighting their respective strengths and weaknesses.	L2	CO4	7 M