



B.E DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2018)

Seventh Semester

INFORMATION SCIENCE AND ENGINEERING

U18ISI7202: Data Visualization

COURSE OUTCOMES

- CO1:** Understand foundational visualization concepts.
- CO2:** Apply visualization principles to enhance data visualization.
- CO3:** Analyze and apply essential design principles to data exploration and visualization.
- CO4:** Create and design appropriate charts, tables, maps, and dashboards.
- CO5:** Effectively tell a story based on real data.

Time: Three Hours

Maximum Marks: 100

**Answer all the Questions :-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)**

- | | | |
|---|-----|-------------------|
| 1. List the modern visualization tools that are most popular in the present market. | CO1 | [K ₁] |
| 2. How do you identify a continuous field in Tableau? | CO4 | [K ₂] |
| 3. Analyze the process of decluttering. | CO2 | [K ₄] |
| 4. What is the need for understanding cognitive load in visualization? | CO2 | [K ₁] |
| 5. List the various user control that can be provided during visualization. | CO4 | [K ₁] |
| 6. What are the tools which enable multiple perspectives? | CO3 | [K ₁] |
| 7. Explain the need for good visualization of the data. | CO1 | [K ₂] |
| 8. Differentiate between exploratory and explanatory analysis. | CO3 | [K ₂] |
| 9. What are the self-analysis questions to be remembered before telling the story? | CO5 | [K ₁] |
| 10. “The more parts of the brain are activated, the more effective the story”-Justify this statement. | CO5 | [K ₅] |

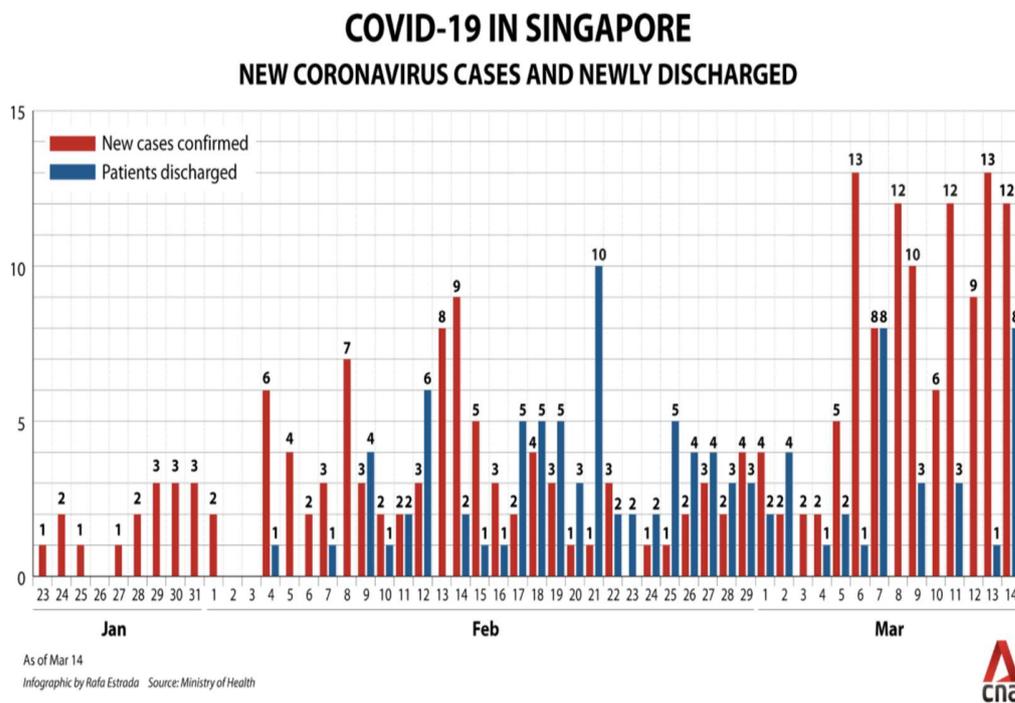
**Answer any FIVE Questions:-
PART B (5 x 4 = 20 Marks)
(Answer not more than 80 words)**

- | | | |
|---|-----|-------------------|
| 11. “The purpose of visualization is insight, not pictures”-Justify this statement. | CO1 | [K ₅] |
|---|-----|-------------------|

- 12. Explain the strategical concept of using contrast with a scenario. Will contrast have any effect on visualization? CO2 [K₂]
- 13. How interactive visualization attracts the audience's interest more than static one? CO3 [K₂]
- 14. List the primary types of data relationships and commonly associated charts. CO3 [K₂]
- 15. Explain a few analytical and mathematical functions that calculate the fields allow to perform. CO4 [K₂]
- 16. How stories help people to understand a scenario better? CO5 [K₂]

**Answer any FIVE Questions:-
PART C (5 x 12 = 60 Marks)
(Answer not more than 300 words)**

- 17. a) Is this the best way to visualize COVID data? (6) CO4 [K₅]



Justify your answer with a detailed explanation with drawbacks if any.

- b) Describe each of the fundamental concepts of dashboard design using a scenario. (6) CO4 [K₂]
- 18. a) List the various pre-attentive attributes used in visualization. How the different types of memory get affected due to the pre-attentive attributes. (6) CO2 [K₁]
- b) What are outliers? How does visualization help in detecting outliers? (6) CO3 [K₂]

19. a) Outline a clear illustration of the Gestalt concepts. (6) CO3 [K₂]

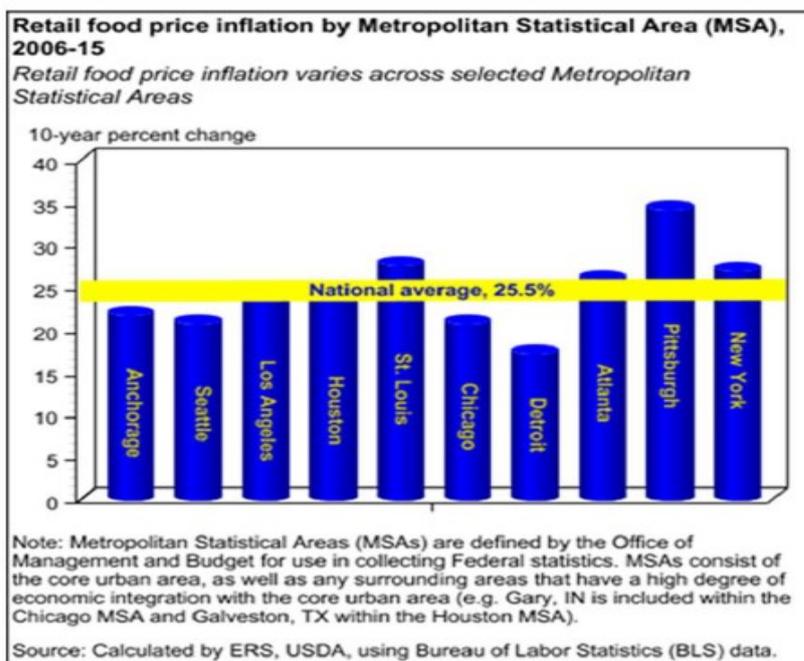
b) (6) CO3 [K₃]



Which of the above charts depicts the right way of data visualization? Illustrate with detailed explanation.

20. What are the various visualization charts that are most popular in tableau? Give an example of each person's use of it in various scenarios. (12) CO1 [K₁]

21. a) Is the Visualization below have clutter? If so, how would you remove the clutter? (6) CO2 [K₃]



b) What makes a visualization ineffective? Explain how to improve them. (6) CO2 [K₁]

22. a) How do design choices differ for visualization and data story? Explain the need to understand frames. (8) CO5 [K₂]
- b) Explain the steps involved to guard against false narratives. (4) CO5 [K₂]
