

CHRIST (Deemed to be University), Bangalore – 560 029

Department of Computer Science

CIA Component 2 Lab Test – March 2024

PG III Trimester

CLASS: 3MCA-A&B (Elective)

Course Name: Advanced Python(MCA372A)

Max. Marks: 30

Time: 2 Hrs

Questions:

Q1:The government of India is keen on understanding the literacy landscape across its states to inform targeted educational policies. You are tasked with conducting an 3D-Exploratory data analysis on the literacy rates in Indian states. The dataset at your disposal includes information on total literacy rates, urban and rural literacy rates, for the years 2001 and 2011 of each states and Union Territories. Ensure that your analysis is comprehensive, and your insights are backed by the data. Present your results in a clear and accessible manner to facilitate informed decision-making by policymakers."

1. Explore the literacy rates across the union territories based on year 2001 and 2011. (5 marks)
2. Investigate relationship between urban and rural literacy rates of all the states using appropriate graph. (5 Marks)
3. Visualize the data using appropriate graphs to enhance the understanding of the literacy landscape in Indian states. Consider creating thematic maps to highlight regional variations. (5 Marks)
4. Create a Indian state map to highlight level variations of Total Literacy of the year 2011. Levels can be measured using following:(5 Marks)
Poor— Min-25% , Fair— 26% to 50%,
Good— 51% to 75%, Excellent — 76% to Max

Q2:"XYZ Corporation, a dynamic logistics company, aims to streamline its operations by developing an internal web-based system to manage inventory. The system should allow authorized employees to perform CRUD operations on the inventory data. As the lead web developer, you are tasked with designing and implementing this system.

1. Implement a secure user Authentication/Authorizationsystem. Create user interface for editing and the validation mechanisms to prevent errors. (4 Marks)
2. Develop a user-friendly interface for adding new inventory items. Design a dashboard or inventory list that displays relevant information to users. Enable authorized users to update information about existing inventory items. Implement a secure delete

functionality to remove outdated or unnecessary inventory entries. Include mechanisms for providing feedback to users after CRUD operations. (6 Marks)

Note:

- If students cannot handle NaN, appropriate formatting and validation, their work will be evaluated for 75% of allotted marks.

Submission Guidelines

- Generate the single .pdf file for Q1 and create word document past the code and output for Q2. File name should be your register number followed by question No: Example: 2347101_Q1.pdf and 2347101_Q2.docx
- Upload the .pdf file and word document in Google Classroom on or before the deadline mentioned.