Name: **Enrolment No:**	

UPES
End Semester Examination, December 2024

Course: Financial Data Analysis
Semester: III
Program: MCA **Time : 03 hrs.**
Course Code: CSDA8002P **Max. Marks: 100**

Instructions: Attempt the questions according to the provided time and given weightage.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	What is data latency? Explain its significance in business intelligence.	**4**	**CO2**
Q 2	Define Business Intelligence (BI). How does Business Intelligence (BI) differ from data analytics?	**4**	**CO1**
Q 3	Draw a bar graph displaying monthly sales figures—January (3,000), February (4,200), March (5,000), and April (4,800)—identify the months with the highest and lowest sales and calculate the percentage change between them.	**4**	**CO4**
Q 4	Discuss the concept of OLAP. List the difference between traditional reports and ad hoc queries in BI.	**4**	**CO2**
Q 5	Identify tools commonly used in BI design and development. List some key resources required for a BI project.	**4**	**CO3**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Measuring the success of a BI solution is key to determining its value to the organization. Discuss the various metrics and methods used to evaluate the success of a BI implementation and how they contribute to continuous improvement.	**10**	**CO3**
Q 7	Evaluate the role of ETL (Extract, Transform, Load) processes in preparing data for business intelligence and analytics. Why is ETL critical to the success of BI? **OR** Explain how managers can apply the behaviour of being reactive, anticipative, adaptive, and proactive in business management with relevant examples.	**10**	**CO1**
Q 8	Analyze the role of Artificial Intelligence (AI) and Machine Learning (ML) in modern business intelligence systems. How do these technologies enhance BI capabilities?	**10**	**CO2**

<table>
<tr><td>Q 9</td><td>Given the following table showing the performance of three products in terms of units sold each month:
<table>
<tr><th>Month</th><th>Product-A</th><th>Product-B</th><th>Product-C</th></tr>
<tr><td>January</td><td>500</td><td>600</td><td>400</td></tr>
<tr><td>February</td><td>550</td><td>400</td><td>430</td></tr>
<tr><td>March</td><td>600</td><td>500</td><td>550</td></tr>
<tr><td>April</td><td>700</td><td>650</td><td>530</td></tr>
<tr><td>May</td><td>650</td><td>700</td><td>480</td></tr>
<tr><td>June</td><td>680</td><td>550</td><td>510</td></tr>
</table>
a. Which product consistently had the highest sales across the months?
b. Calculate the total sales for each product over the six months.
c. What is the average number of units sold for Product C?
d. Which product had the greatest increase in sales from February to March?
e. Draw the bar chart for the given table.</td><td>10</td><td>CO4</td></tr>
<tr><td colspan="4">SECTION-C
(2Qx20M=40 Marks)</td></tr>
<tr><td>Q 10</td><td>Describe how a BI project can be planned from start to finish. Include key tasks, resource allocation, risk management, and how each of these elements contributes to the timely and successful delivery of the BI solution.
OR
Discuss the various output formats available for reports (PDF, Excel, CSV, XML) and the advantages and disadvantages of each. In which scenarios would one format be preferred over the others?</td><td>20</td><td>CO3
CO4</td></tr>
<tr><td>Q 11</td><td>A healthcare organization is creating a data warehouse to consolidate its patient records, treatment history, and billing information from multiple facilities. As the data architect, you need to choose the most appropriate schema (Star, Snowflake, or Fact Constellation) to ensure efficient analysis and reporting.
a) Identify the primary factors you should consider when selecting a schema for the healthcare organization's data warehouse. Discuss how each factor, such as data complexity, query performance, scalability, and ETL processes, would influence your decision.
b) Compare and contrast the advantages and disadvantages of a Star schema versus a Snowflake schema in the context of this healthcare organization. Indicate which schema would likely be more appropriate and provide reasons for your recommendation.
c) If the organization later decides to incorporate data from additional domains (e.g., research and supply chain management), explain how this could impact your schema selection. Describe any adjustments to the schema that might be necessary and justify your approach.</td><td>20</td><td>CO1</td></tr>
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