Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

[Total No. of Questions: 09] **[Total No. of Pages: 02]**

Uni. Roll No. .2203[illegible].....

Program: B.Tech. (Batch 2018 onward)
Semester: 5th
Name of Subject: Business Intelligence & its Applications
Subject Code: PEIT-101
Paper ID: 16444

Time Allowed: 03 Hours **Max. Marks: 60**

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A **[Marks: 02 each]**

Q1.

a) What is purpose of Tableau?

b) Why we use Power BI?

c) Compare between structured and unstructured data.

d) Draw star schema for retail chain store.

e) List any 6 open source tools useful in BIA.

f) Outline the things to consider when choosing business intelligence.

Part – B **[Marks: 04 each]**

Q2. Elaborate with a block diagram the knowledge discovery process.

Q3. Explain the significance of Bayesian classification in BI with some example.

Q4. You are the data design specialist on the data warehouse project team for a software consultancy firm. Design a star schema to track the sales units and sales, rupees with three dimension tables.

Q5. You are data transformation specialist for a warehouse project of a construction company. Prepare a project task list to include all the detailed tasks needed for data extraction and transformation.

Q6. Describe how decisions tress works? Choose an example and explain how this knowledge discovery process works?

Q7. Distinguish between **a)** KPI and Business metrics b) OLTP and OLAP

Part – C **[Marks: 12 each]**

Q8. a) Compare between Partition based clustering and density based clustering .
b) Discuss the need of business intelligence program.

OR

a) You are responsible for selection of data cleansing tools for your data warehouse environment. How will you define the criteria for selection? Prepare a checklist for evaluation and selection of these tools.
b) How does Pivot table analyze data, identify patterns and trends, and answer questions about the data?

Q9. a) Compare ROLAP with MOLAP on the basis of data storage, underlying technologies, function and features.
b) You are asked to form a small team to evaluate the MOLAP and ROLAP models. Describe the criteria your team will use to make the evaluation and selection.

OR

a) How does Apriori algorithm works?
b) Explain the concept of Frequent Item set Mining Methods with the help of basket data analysis; consider bread, butter, milk etc as components of transaction database.

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Guru Nanak Dev Engineering College, Ludhiana			
Department of Information Technology			
Program	B.Tech.(IT)	**Semester**	5
Subject Code	PEIT-101	**Subject Title**	Business Intelligence & its Applications
Mid Semester Test (MST) No.	II	**Course Coordinator(s)**	Dr. Amit Kamra
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date of MST	Nov 2024	**Roll Number**	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Why is the entity relationship model not suitable for data warehouse?	CO1, L3	2
Q2	What is cluster density and how does density based clustering works?	CO5, L2	2
Q3	Distinguish between (i) Fact table and dimension table (ii) Data accuracy and data quality	CO3, L1	4
Q4	In a star schema to track the shipments of a distribution company, the following dimension tables are found **time, customer ship to, ship from, and product, type of deal and mode of shipment.** Review these dimensions and list the possible attributes for each of the dimension tables.	CO5,CO6, L4	4
Q5	What are KPI? How organizations do uses KPI for their business?	CO6, L3	4
Q6	(i) Discuss the various steps used in K means clustering. (ii) Why do we use Bayesian classification?	CO5, L2	8

Course Outcomes (CO)

Students will be able to

1	Utilize the concept of data warehouse and data mining for solution to primarily business projects which are enabled using information technology.
2	Analyze and document the complexity of the business information requirement regarding data marts.
3	Design and develop solutions using OLAP tools
4	Formulate and investigate the complex data mining problem with the help of modern query languages and data mining tools for interpretation of data and valid conclusions.
5	Apply Association rules, classification and clustering methods on different datasets based on real world problems like public health, safety etc.
6	Apply Business intelligence inferences to assess social, health, safety, legal and cultural issues.

RBT Classification	**Lower Order Thinking Levels (LOTS)**			**Higher Order Thinking Levels (HOTS)**		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	*Remembering*	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dev Engineering College, Ludhiana

Department of Information Technology

Program	B.Tech.(IT)	**Semester**	5
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Mid Semester Test (MST) No.	1	**Course Coordinator(s)**	Dr. Amit Kamra
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date of MST	Sept 2024	**Roll Number**	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Data warehouse is an environment not a product. Comment	CO1, L2	2
Q2	For an Airline company, how can strategic Information increase the number of flyers. Give its specific details	CO2, L2	2
Q3	Distinguish between (i) Structured and Unstructured data (ii) ROLAP and MOLAP.	CO3, L1	4
Q4	As the lead architect for a data warehouse in a large domestic retail store chain, prepare a list of project tasks relating to the designing the architecture. In which development phases will these tasks be performed?	CO5,CO6, L4	4
Q5	You are the data design specialist on the data warehouse project team for a retail company. Design a Star schema to track the sales units and sales dollars with three dimension tables. Explain how you will decide to select and build four two way aggregates.	CO5, L6	4
Q6	(i) Discuss the common sources of data pollution and provide examples. How can we minimize it? (ii) Explain the concept of ETL.	CO2, L2	8

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