Answers Document

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# Section C

* Q11 A: A marketing analytics team is trying to extract valuable insights from a large customer transaction database to improve campaign targeting. In this context, what are the main stages involved in the Knowledge Discovery in Databases (KDD) process, and can you briefly illustrate each stage with a relevant example? (OR) B A retail analytics company is working with a chain of supermarkets to improve customer satisfaction, optimize inventory, and personalize marketing strategies. The team wants to explore various sources of data available across the business. In this context, what are the different types of data that can be mined, and how can each type be described in terms of its structure and potential use?

A11 A: A marketing analytics team is trying to extract valuable insights from a large customer transaction database to improve

* Q12 A: How does data integration support the data mining process, and why is it crucial for generating accurate and comprehensive insights? (OR) B A healthcare analytics team is preparing patient records for a machine learning model to predict disease risk. The data includes numerical values like blood pressure and cholesterol levels, as well as categorical information like age groups and diagnosis codes. To ensure the model performs accurately, the team needs to preprocess the data appropriately. What roles do data transformation and discretization play in the data preprocessing phase, and why are they important?

A12 A: B, I have helped here, analytic stream is preparing pass and records for mission learning model to predict DCs risk. The data includes

* Q13 A: A logistics company is planning to implement a data warehouse to centralize and analyze its historical shipping and inventory data. What are the core concepts that define a data warehouse, and how do these concepts support effective data storage and decision-making? (OR) B ABC company is analyzing its sales data across multiple regions, time periods, and product categories to make strategic decisions. To support this analysis, what types of OLAP operations can be used, and how would each operation apply in this business context?

A13 A: 13A, a logistic company is planning to implement data warehouse to centralize and analyze its historical shipping and inveterated.

* Q14 A: A financial institution is deciding between using OLAP or OLTP systems to manage its data for daily transactions and long-term trend analysis. In this context, how do OLAP and OLTP systems differ, and what are the specific use cases each is best suited for? (OR) B A company’s data warehouse stores detailed customer transaction records. To generate high-level summaries for decision-making, the team wants to simplify the data without losing essential patterns. What is the significance of using data generalization through attribute-oriented induction, and how does it support strategic analysis?

A14 A: 14A, a financial institution is deciding between using OLA for oil tech systems to manage its data for daily

* Q15 A: A software development team is designing a new application that will handle large volumes of user data. To ensure efficient data organization and retrieval, they need to plan the structure of their database carefully. What is the importance of data modeling, and what role does it play in effective data management? (OR) B A startup is designing a database to manage customer orders, products, and inventory efficiently. To choose the right data model, the team is considering the relational approach. What are the fundamental characteristics of a relational data model, and how do they support effective data organization and retrieval?

A15 A: b a stutter piece disinning the database to manage the customer address products and inventory efficiently

* Q16 A: Consider the scenario that a “Mom and Me” store must improve their sales in the next quarter year of 2021. The technical team has decided to apply data mining techniques to attract new customers to their shop. So, the technical team started collecting the data from various corporate hospitals and by extracting and mining the data of pregnant women, they can find the customers who may buy the products from their shop. The data collected from different hospitals in different formats. Summarize the seven steps of knowledge discovery process on the above data to mine interesting patterns. Suppose there are any missing value in any of the data like no data filled for delivery and month of delivery. Identify the ways to handle those data before applying mining techniques. (OR) B Analyze the architecture of a data warehouse system within a business organization. Your case study should include a detailed explanation of the components, such as data sources, ETL processes, staging areas, the central data warehouse, metadata repository, OLAP engine, and end-user access. Additionally, provide a diagram to illustrate the architecture. Discuss how this architecture supports the organization's data consolidation, quality management, advanced analytics, and reporting needs.

A16 A: 16, yes, scenario that a moment missed or must improve their sales in the next

* Q17 A: Suppose that a data warehouse consists of the three dimensions time, doctor, and patient, and the two measures count and charge, where charge is the fee that a doctor charges a patient for a visit. Draw a star schema diagram for the above data warehouse. Reconstruct the above star schema by adding a new dimension table medicine with the features medicine\_id, medicine\_name, supplier\_id, supplier\_name, supplier\_address and supplier\_phone. (OR) B Perform a comprehensive case study on data modeling for a specified business scenario. Your study should cover the entire process, from gathering requirements to creating conceptual, logical, and physical data models. Discuss the techniques used for normalization, entity-relationship (ER) diagram creation, and the mapping of business rules into data structures. Provide diagrams to illustrate your models and explain how they support the business’s data management, integrity, and retrieval needs. Additionally, evaluate the impact of your data model on system performance and scalability.

A17 A: 17a. Suppose that the data warehouse consists of 3 dimensions time, doctrine and passion and the 2 measure count and charge.