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UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR

SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR THREE SEMESTER TWO EXAMINATIONS

FOR THE DEGREE OF BACHELORS OF SCIENCE
(INFORMATION TECHNOLOGY)

COURSE CODE : BIT 326

COURSE TITLE : DATA WAREHOUSING AND MINING

DATE: 11/08/2023

TIME: 8.00 AM. – 10.AM.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

QUESTION ONE [COMPULSORY] [30 MARKS]

- a. Khetia group of stores has a huge sales network. To control the sales, it is divided into regions. Each region has multiple zones and each zone has different towns. Each sales person is allocated different towns. The objective is to track sales figure at different granularity levels of region and to count number of products sold.
- i. Design a star schema by considering granularity levels for region, sales person and time. [6 Marks]
 - ii. Convert the star schema to snowflake schema. [6 Marks]
- b. Discuss the advantages of a cloud-based data warehouse. [8 Marks]
- c. Explain three benefits of data warehouse to organizations that use them. [6 Marks]
- d. Explain clustering in data mining. [4 Marks]

QUESTION TWO [20 MARKS]

- a. Describe any four characteristics of the computing environment needed to provide strategic information. [8 Marks]
- b. Explain any two reasons why operational systems are not suitable for providing strategic information. [4 Marks]
- c. With the aid of a diagram, discuss the typical architecture of a typical data mining system. [8 Marks]

QUESTION THREE [20 MARKS]

- a. Use a well labelled diagram describe the components of a data warehouse. [12 Marks]
- b. Discuss application and major issues in data mining. [6 Marks]
- c. Distinguish between slowly changing dimension and rapidly changing dimension. [2 Marks]

QUESTION FOUR [20 MARKS]

- a. Describe any four types of activities that are part of the ETL process. [8 Marks]
- b. Explain why metadata is vital for end-users. [4 Marks]
- c. Discuss the differences between data mining and OLAP. [8 Marks]

QUESTION FIVE [20 MARKS]

- a. Explain the concept of Neural Networks. [4 Marks]
- b. Describe the functional features of a web-enabled warehouse. [10 Marks]
- c. Describe any three different methods for information delivery. [6 Marks]