



(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

**UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
SUPPLEMENTAR/SPECIAL EXAMINATIONS
YEAR THREE SEMESTER TWO
EXAMINATIONS**

**FOR THE DEGREE OF
BACHELORS OF SCIENCE
(INFORMATION TECHNOLOGY)**

COURSE CODE : BIT 324

COURSE TITLE : DATA WAREHOUSING AND MINING

DATE: 17/10/2018

TIME: 11.30A.M. - 1.00P.M.

SUPPLEMENTARY/SPECIAL

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

QUESTION ONE [COMPULSORY] [30 MARKS]

- a. Distinguish between ER Modelling and Dimensional Modelling. [2 Marks]
- b. Explain any THREE differences between a data mart and a data warehouse. [6 Marks]
- c. Describe a Web-enabled data warehouse. [2 Marks]
- d. Identify any FOUR types of activities that are part of the ETL process. [4 Marks]
- e. Describe any TWO functions of data correction in data cleansing tools. [4 Marks]
- f. Explain how the information from the data warehouse promotes customer relationship management. [2 Marks]
- g. Explain the difference between data mining and OLAP. [2 Marks]
- h. Discuss the differences between star and snowflake schemas in terms of **query performance, ease of maintenance and dimension tables.** [6 Marks]
- i. Identify the two common methods of getting the desktops ready during data warehouse deployment. [2 Marks]

QUESTION TWO [20 MARKS]

- a. "A data warehouse in an environment, not a product". Discuss. [3 Marks]
- b. Describe THREE specific ways in which agent technology may be used to enhance the value of the data warehouse in a large manufacturing company. [6 Marks]
- c. "A dimension table is wide and a fact table is deep". Explain. [2 Marks]
- d. Discuss data granularity in a data warehouse. [3 Marks]
- e. Describe any THREE differences between OLTP and OLAP. [6 Marks]

QUESTION THREE [20 MARKS]

- a. Explain why it is a good practice to load the dimension tables before the fact tables. [2 Marks]
- b. Explain a factless-fact table and describe a situation where the creation of a fact-less fact table may be necessary. [4 Marks]
- c. Describe TWO major functions and services for information delivery. [4 Marks]
- d. 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 shillings with three dimension tables. [10 Marks]

QUESTION FOUR [20 MARKS]

- a. "Data warehousing is the only viable means to resolve the information crisis and to provide strategic information". Explain THREE reasons to support this assertion. [6 Marks]
- b. Describe the cluster detection technique. [2 Marks]
- c. Explain the meaning of market basket analysis. [2 Marks]
- d. Distinguish between conformed dimension and role-playing dimension. [2 Marks]
- e. Information package given for a hotel chain is illustrated in the figure 1. Use this information package and design a STAR schema. [8 Marks]

Information Subject: Hotel Occupancy

Dimensions

Hierarchies /
Categories

Time	Hotel	Room Type			
Year	Hotel Line	Room Type			
Quarter	Branch Name	Room Size			
Month	Branch Code	Number of Beds			
Date	Region	Type of Bed			
Day of Week	Address	Max. Occupants			
Day of Month	City/State/Zip	Suite			
Holiday Flag	Construction Year	Refrigerator			
	Renovation Year	Kitchenette			
Facts: Occupied Rooms, Vacant Rooms, Unavailable Rooms, Number of Occupants, Revenue					

Figure 1 Information package

QUESTION FIVE [20 MARKS]

a. Explain the differences between additive, semi-additive and non-additive measures.

[6 Marks]

b. Explain the benefits of aggregation.

[4 Marks]

c. You recently joined as the data extraction specialist on the data warehouse project team developing a conformed data mart for a local but progressive pharmacy. Make a detailed list of functions and services for data extraction, data transformation, and data staging.

[10 Marks]