



(Knowledge for Development)

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KIBABII UNIVERSITY

(KIBU)

**UNIVERSITY EXAMINATIONS
2016/2017 ACADEMIC YEAR
SPECIAL/SUPPLEMENTARY 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: 27/09/2017

TIME: 11.00A.M. – 1.00P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

QUESTION ONE [COMPULSORY] [30 MARKS]

- a. Distinguish between a data mart and a data warehouse. [2 Marks]
- b. i. Describe a Web-enabled data warehouse. [2 Marks]
ii. Discuss any THREE functional features of a web-enabled warehouse. [6 Marks]
- c. Identify any FOUR types of activities that are part of the ETL process. [4 Marks]
- d. Describe any TWO functions of data correction in data cleansing tools. [4 Marks]
- e. Explain how the information from the data warehouse promotes customer relationship management. [2 Marks]
- f. Explain the difference between data mining and OLAP. [2 Marks]
- g. Identify any two of the physical design steps and describe the activities. [6 Marks]
- h. 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. Discuss 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. Your company is in the business of renting DVDs and video tapes. The company has recently entered into e-business and the senior management wants to make the existing data warehouse Web-enabled. Describe any three of the major tasks required for satisfying the management's directive. [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]

As a data warehouse expert, you have been invited to give a presentation to the senate of Kibabii University. The ICT manager has requested you to prepare a presentation that answers the following questions.

- a. Describe six characteristics of the computing environment needed to provide strategic information. [12 Marks]
- b. Explain TWO reasons why operational systems current being used by the University are not suitable for providing strategic information. [4 Marks]
- c. Discuss the benefits of data warehouse to organizations that use them. [4 Marks]

QUESTION FIVE [20 MARKS]

- a. List three processes in which metadata is significant for IT and explain why. [6 Marks]
- b. In your organization, assume that customer names and addresses are maintained in three customer files supporting three different source operational systems. Describe the possible

entity identification problem you are likely to face when you consolidate the customer records from the three files. [6 Marks]

- c. 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