



KENYATTA UNIVERSITY

EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION

SCO 335: BUSINESS INTELLIGENCE

2ND SEMESTER 2023/2024

TIME: 2 HOURS

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (COMPULSORY) [30 MARKS]

- a. Explain the meaning of the following terms as used in Data Mining:
 - i. OLAP
 - ii. Market Basket Analysis
 - iii. Cross-selling

[3 Marks]
- b. Define the term Business Intelligence and describe any four drivers of Business Intelligence.

[5 Marks]
- c. "Implementing a data mart can be less expensive than implementing a data warehouse". Give two reasons why you agree with this statement.

[2 Marks]
- d. Distinguish between web mining and text mining

[2 Marks]
- e. Explain the term visualization and outline its impact on the performance of a business

[5 Marks]
- f. State and explain five applications of relational marketing

[5 Marks]
- g. Our customer is a Dutch charity organization that wants to be able to classify its supporters to donors and non-donors. The non-donors are sent a single marketing mail a year, whereas the donors receive multiple ones (up to 4). **Tasks:** 1 Develop a data mining model for classifying the customers to donors and non-donors 2 Explain through the model which factors are important in deciding who is a donor.

[4 Marks]
- h. "Digicom", is a digital electrocompany which has an online community platform that allows their prospective clients to engage with their users. "Digicom" has been using social media (mainly X and Facebook) to help get new clients and to increase the number of prospects/leads. They attribute 10 % of their daily revenue to social media. State and explain four ways by which social media can improve business performance in the context of BI.

[4 Marks]

QUESTION TWO

- a. Companies are facing pressure on several fronts thus demanding that they become more efficient and extract more from their investments. State and explain five business intelligence tools which can be used to achieve this goal. [5 Marks]
- b. There are many business drivers in play today that are motivating companies to establish data warehouses. Discuss any five business drivers and five technical drivers which motivate companies to establish data warehouses [10 Marks]
- c. With the help of a diagram, describe the Business Intelligence Architecture [5 Marks]

QUESTION THREE

The Seattle-based coffee chain Starbucks has a popular Loyalty Card program which amasses individualized purchase data on millions of customers. Starbucks has approximately 90 million transactions per week from 25,000 stores and over 6 million loyalty members. Starbucks would like to predict what purchases and offers an individual customer is likely to be interested in via mobile devices. The CEO would like to see that the system lets Starbucks draw existing customers into its stores more frequently and increase its volume of sales. Customers are also able to add credit to their loyalty cards as well as check their points earned towards a free coffee via their mobile devices.

- i. Write a relevant priority for this case study. [2]
- ii. Name two ways BI can help this organization achieve this priority [2]
- iii. Write three descriptive questions the dashboard should be able to provide [3]
- iv. List two diagnostic questions the dashboard should answer [2]
- v. List four data items you would use on the dashboard [4]
- vi. Identify two predictive analytics questions the dashboard should respond to. [2]
- vii. Discuss any five ethical and privacy considerations that should be applied in relation to the chosen priority [5]

QUESTION FOUR

- a. Use a suitable example, explain the difference between structured and unstructured decision making including the related managerial level/s involved. [4 Marks]
- b. Explain how ETL process support the creation of Business Intelligence systems for an enterprise [6 Marks]
- c. Before the data is mined, the BI team needs to clean it. Explain five methods used in data cleaning. [5 Marks]

- d. Using appropriate examples, describe five data mining classification techniques [5 Marks]

QUESTION FIVE

- a. Study the table below and answer the questions that follow:

TOWN	PRODUCT	TIME	SALES
NAIROBI	MILK	2020	15000
NAKURU	BREAD	2021	24000
KISUMU	BUTTER	2022	6000

- i. Use the data in the table to construct a data cube [2]
ii. Use your answer in i. above to distinguish between a slice and a dice [2]
iii. Explain three importance of OLAP data cube in BI [3]
iv. State two differences between OLAP data cube and spreadsheets [2]
b. Explain three applications of data mining in the banking industry [6 Marks]
c. Explain 5 ways in which BI can help Companies analyze the changing trends in market share [5]