PAN AFRICA CHRISTIAN UNIVERSITY
Where Leaders are Made

UNIVERSITY EXAMINATIONS: 2025/2026

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

BSIT/BIT 407

BUSINESS INTELLIGENCE & ANALYTICS

END TERM EXAMINATION

ONLINE

EXAM DATE: **WEDNESDAY**

TIME: **8:00AM – 11:00AM**

DATE: APRIL, 2026 **TIME: 3 HOURS**

INSTRUCTIONS: Question One is Compulsory, Choose Three Other Questions

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ONLINE EXAMINATION

Business Intelligence & Analytics

Instructions:

- Section One is **Compulsory**.
- In Section Two, answer **ANY THREE (3)** questions.
- All questions require **application and critical analysis**.
- Support your answers with relevant examples or real-world illustrations.

SECTION ONE (COMPULSORY)

Question One (10 Marks)

a) A multinational organization seeks to improve its BI implementation. Analyze how the following BI attributes contribute to achieving organizational goals:

i. Timeliness
ii. Accuracy
iii. Acceptance **[6 Marks]**

b) Business Intelligence implementation can be divided into core components. Analyze the strategic importance of:

i. Data Capture
ii. Data Access and Analysis **[4 Marks]**

SECTION TWO (ANSWER ANY THREE QUESTIONS)

Question Two (10 Marks)

A technology firm is developing an AI-driven logistics system that operates across multiple locations.

a) Analyze how a **Distributed Intelligent Agent** system would function within this environment, highlighting its operational advantages. **[2 Marks]**

b) The firm wants to ensure its machine learning agents perform optimally. Apply the following characteristics to the system and evaluate their importance:

i. Rationality – How would rational behavior influence decision-making. **[2 Marks]**
ii. Mobility – How does mobility enhance system performance. **[2 Marks]**
iii. Learning/Adaptation – Why is continuous learning essential. **[2 Marks]**
iv. Veracity – How does truthfulness of data affect outcomes. **[2 Marks]**

Question Three (10 Marks)

A private university (Pac University) and a mobile telephony company are seeking to leverage Business Intelligence for strategic advantage.

a) Analyze TWO ways in which the effective use of customer/student data through BI can enhance **customer satisfaction and loyalty** at Pac University. **[4 Marks]**

b) Evaluate how Business Intelligence tools support organizations in tracking and responding to **market trends, competitor strategies, and industry shifts**. **[2 Marks]**

c) A mobile telecommunication company seeks to introduce targeted pricing plans. Analyze TWO ways BI can be used to examine customer spending patterns and inform strategic pricing decisions. **[4 Marks]**

Question Four (10 Marks)

a) A robotics company claims its new AI chatbot has passed the Turing Test. Analyze the criteria you would use to determine whether the system has genuinely passed the Turing Test. **[2 Marks]**

b) You have been hired to design a company's data infrastructure. Analyze the architecture and structure of a **data warehouse**, explaining how its components support decision-making. **[3 Marks]**

c) A financial institution wants to predict loan default risks. Apply decision tree concepts to illustrate their structure and explain how they can be used for predictive analysis in this context. **[5 Marks]**

Question Five (10 Marks)

a) A company integrating Machine Learning into its BI platform is facing implementation challenges. Critically analyze TWO major challenges that commonly affect BI systems in Machine Learning environments. **[2 Marks]**

b) A startup plans to build a BI system. Recommend and justify THREE programming languages suitable for BI development, explaining their practical applications.
[6 Marks]

c) Before analytics can be performed, the company must organize its data storage infrastructure. Analyze and differentiate between:

i. Data Marts
ii. Central Data Warehouse **[2 Marks]**

Question Six (10 Marks)

You have been appointed as a Business Intelligence consultant for different sectors seeking to enhance data-driven decision-making.

a) As a BI consultant for a university, analyze how Business Intelligence and Analytics can be applied to improve operational efficiency and decision-making in the **College Enrollment and Admissions Department**. **[3 Marks]**

b) A rapidly growing online retail company is struggling with fluctuating sales and customer retention. Analyze how Business Intelligence tools can be applied within the **E-commerce industry** to improve performance and competitive positioning. **[3 Marks]**

c) During the implementation of a new BI system, inconsistencies were discovered in customer records. Evaluate the significance of **data cleansing during data capture and acquisition**, and explain the potential impact of poor-quality data on decision-making.
[4 Marks]

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