



PAN AFRICA CHRISTIAN UNIVERSITY

SCHOOL OF LEADERSHIP, BUSINESS AND TECHNOLOGY

**END OF SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF BUSINESS AND INFORMATION TECHNOLOGY**

MAY – AUGUST 2018

CAMPUS: ROYSAMBU

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: BIT407

COURSE TITLE: BUSINESS INTELLIGENCE & ANALYTICS

EXAM DATE: FRIDAY 10TH AUGUST 2018

TIME: 5:30PM-8:30PM

INSTRUCTIONS

- Read all questions carefully before attempting.
- Write your **student number** on the answer booklet provided.
- This exam script has **TWO (2)** sections.
- Answer All questions in Section **A** and any other **Four** questions in Section **B**.
- Write only your **student number** on the answer booklet provided.
- None programmable calculator permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers.
- *ALL PAC University's examination rules and regulations apply*

Section One (I) 20 Marks.

Question One - Compulsory:

- a) Business Intelligence is an applications and technologies that help companies to analyze changing trends in market share; changes in customer behavior and spending patterns; customers' preferences; company capabilities; and market conditions.

Discuss how BI would help achieve the above named characteristics;

- i. Customer behavior. [2 Marks]
 - ii. Company capabilities [2 Marks]
 - iii. Market conditions [2 Marks]
 - iv. Spending patterns. [2 Marks]
- b) Discuss how the following attributes of BI would work to achieve the underlying Goals.
- i. Timeliness. [2 marks]
 - ii. Accuracy. [2 marks]
 - iii. Acceptance. [2 Marks].
- c) The Business Intelligence concepts can be decomposed into the following Parts, discuss them in details.
- i. Data Capture. [2 Marks]
 - ii. Data Access/& Analysis. [2 Marks]
 - iii. Data Storage [2 Marks]

Section Two (II) Answer any 4 questions

Question Two.

- a) Explain the importance of data cleansing during data capture and acquisition. [4 Marks].
- b) Explain the term data transformation and its relevance in data warehouse. [5 Marks].
- c) Discuss the architecture and structure of any data warehouse. [5 Marks].
- d) Illustrate the following forms of data storage before it can be considered prime for use by any business intelligence and analytic tool.
- i. Data Mats
 - ii. Central Data warehouse.
 - iii. Distributed Data warehouse. [6 Marks]

Question THREE 20 Marks:

Analyze and discuss the application of business intelligence and analytics using the following areas of operation;

- a) College enrollment and admissions department. [5 Marks].
- b) Police intelligence and Crime agency. [5 marks].
- c) Supermarkets and retail business. [5 Marks].
- d) E-Commerce Industry. [5Marks]

Question FOUR 20 Marks:

Elaborate on the criteria applied and used in the following approaches in order to resolve Business intelligence problems.

- a) Decision Tree Analysis. [6 Marks].
- b) Neural Network Analysis. [6 Marks]
- c) The Prisoners Dilemma. [4 Marks]
- d) The Game of Chicken. [4 Marks]

Question FIVE 20 Marks:

- a) You have a row boat and need to cross a river with your dog, goat, and salad. Unfortunately, apart from yourself only one more item/animal fits into the boat. For obvious reasons, you cannot leave the dog and the goat unattended -or the goat and the salad, for that matter.
Using a well-illustrated diagram, Use a Blind search approach to resolve a scenario above. [10 Marks]
- b) Using a diagram, illustrate the structure of decision trees and their applications. [5 Marks].
- c) Explain the following Terminology;
 - i. Fuzzy Logic
 - ii. ANN
 - iii. Turing Test
 - iv. Ambient Intelligence
 - v. Decision Tree [5 Marks].

Question SIX 20 Marks:

- a) Discuss the critical emerging issues of ICT in the listed fields of machine learning.
 - i. Artificial Intelligence. [5 Marks]
 - ii. Ambient Intelligence. [5 Marks]
- b) Highlight in details TWO major challenges that affect Business intelligence in the area of machine learning. [4 Marks].
- c) Enumerate any THREE programming languages where BI is developed.[6 Marks]

Question SEVEN 20 Marks:

- a) List and explain any FOUR Mundane reasoning tasks [8 Marks].
- b) Give an overview of a Distributed Intelligent agent. [4 Marks]
- c) Discuss the following characteristics of machine learning agents under the following subtopics;
 - i. Rationality. [2 Marks]
 - ii. Mobility. [2 Marks]
 - iii. Learning/adaptation. [2 Marks]
 - iv. Veracity. [2 Marks]