BISHOP STUART UNIVERSITY

UNDERGRADUATE EXAMINATIONS, FIRST SEMESTER 2021/2022

PROGRAMME	:	BIT2
COURSE UNIT	:	BUSINESS INTELLIGENCE and DATA WAREHOUSES
COURSE CODE	:	BIT2101
YEAR	:	II
DATE	:	24/03/2022
TIME	:	9:00AM - 12:00NOON.

INSTRUCTIONS:

1) Section A is compulsory and carries 40 marks.
2) All questions in section B carry equal marks (20 marks each), attempt only three questions in this section.
3) Begin each question on a fresh page.
4) Write clearly and legibly.
5) Do not write anything on this Question Paper. Use the examination booklet for any rough work.
6) Do not take mobile phones into the examination room.
7) Indicate Questions attempted on the Answer sheet in the column of questions.
8) Follow the instructions of the Examination Supervisor and Invigilators

SECTION A (40 marks)

1. What is business intelligence? [3 marks]
2. Define the following types of intelligence:
   (a) Operational intelligence [3 marks]
   (b) Tactical intelligence [3 marks]
   (c) Strategic intelligence [3 marks]
3. TRUE of FALSE? A data warehouse is a subject-oriented, integrated, time-varying and volatile collection of data that is used primarily in organisational decision making. [2 marks]
4. TRUE or FALSE? In Knowledge discovery and Data Mining, Data Transformation must be achieved before preprocessing starts. [2 marks]
5. Give any three importances of data mining. [2 marks each]
6. Give any three causes of dirty data. [2 marks each]
7. Explain what is meant by data reduction. [3 marks]

8. Explain the difference between parametric methods and non parametric methods of data reduction. [4 marks]

9. Explain what is meant by frequent pattern analysis. [3 marks]

10. TRUE or FALSE? In the Apriori algorithm of frequent itemset mining methods, the Apriori pruning principle means that if there is any itemset which is infrequent, its superset should not be tested. [2 marks]

SECTION B (60 marks)

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1. (a) Name any four measures of data quality. [2 marks]
   (b) Explain the following three tasks of data preprocessing [2 marks]
      i. Data integration [2 marks]
      ii. Data transformation [2 marks]
   (c) Explain what is noisy data. [3 marks]
   (d) Explain the following as means of handling noisy data:
      i. Binning [3 marks]
      ii. Regression [3 marks]
      iii. Clustering [3 marks]

2. (a) Explain with an example what is derivable data? [2 marks]
   (b) Explain and give an example in each case the following methods of data reduction:
      i. Linear regression [3 marks]
      ii. Nonlinear regression [3 marks]
      iii. Histogram analysis [3 marks]
      iv. Clustering [3 marks]
      v. Sampling [2 marks]
   (c) Explain any two types of normalisation in Data Transformation. [4 marks]

3. Consider the following transaction data base:

Tid	Items bought
1	A, B, C
2	A, D, C
3	A, C, E
4	B, E, F
5	B, D, C, E, F

   (a) Give any three examples of itemsets from this data base. [2 marks]
   (b) Give the absolute support for each of your itemset example. [3 marks]
   (c) Compute the relative support for each of your itemset example. [3 marks]
   (d) Suppose the minimum support is 40% and minimum confidence is 50%;
      i. Compute the support s and confidence c for the following association rules in the data base above:
         I. $A \Longrightarrow C$ [4 marks]

II. $C \Longrightarrow A$ [2 marks]

III. $\{A, C\} \Longrightarrow \{D\}$ [4 marks]

ii. Which of the above association rules is a strong rule? Explain your answer. [2 marks]

4. (a) Give a summary of the Apriori algorithm for frequent itemset mining. [6 marks]

(b) Consider the following transaction data base

Tid	Items bought
1	A, B, C
2	A, D, C
3	A, C, E
4	B, E, F
5	B, D, C, E, F

Suppose the minimum support is 3, use the apriori algorithm to generate all the frequent itemsets. Clearly indicate and explain all the steps of the algorithm scans. [14 marks]

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UNDERGRUATE EXAMINATIONS, FIRST SEMESTER 2023/2024

PROGRAMME : **BIT**

COURSE UNIT : **Geographic Information system (GIS) and remote sending (RS)**

COURSE CODE : **BIT2105**

YEAR OF STUDY : **TWO**

DATE : **19/12/2022**

TIME : **8:00 – 11:00 AM**

INSTRUCTIONS

1) Attempt 4 questions of your choice from the paper
2) All questions carry equal marks
3) Begin each question on a fresh page
4) Write clearly and legibly.
5) Don't write anything on this Question Paper. Use the examination booklet provided for answering and any rough work.
6) Don't take mobile phones, handouts or bags into the examination room.
7) Follow the instructions of the Examination Supervisors & Invigilators.
8) Indicate Questions attempted on the Answer sheet in the column of questions.
9) Provide all required clearance items to the exam Invigilators and Monitors

1 a) Using relevant examples differentiate Geographic information system and remote sensing (10 marks)

b) Explain how relevant GIS and RS are in Ugandan Science and Technology sector in the 21st Century (5 marks)

2 a) Using relevant examples, describe the application of GIS and RS in land use planning (10 marks)

b) GIS and RS are essential in urban planning and management using specific examples (5 marks)

3a) Discuss the challenges faced by GIS and RS users in Uganda (10 marks)

b) Suggest possible solutions to the challenges mentioned in 3 a) above (5 marks)

4 a) GIS and RS are important in the transport sector. Use relevant examples to explain the statement above (10 marks)

b) Explain how GIS and RS can be used by pilots in airplanes (5 marks)

5 a) GIS and RS are essential tools in education sector. Explain using relevant examples From Uganda (10 marks)

b) Discuss why GIS and RS can be used in information technology education in Uganda (5 marks)

6 a) GIS and RS are essential for creation of students' study area maps. Describe the process of mapping your study area 10 marks)

b) Explain the elements of a good map and the function for each (5 marks)

----------GOOD LUCK AND GOD BLESS YOU----------