



NATIONAL OPEN UNIVERSITY OF NIGERIA

Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi, Abuja-Nigeria

FACULTY OF COMPUTING

Department of Computer Science

2024_2 EXAMINATION

COURSE TITLE: DATA MINING AND DATA WAREHOUSING

COURSE CODE: CIT302

CREDIT UNIT: 3

TIME: 2 hours, 30 minutes.

INSTRUCTIONS: Answer question 1 and any other three questions. Question 1 is compulsory

1 (ai) Mention four (4) data mining applications you know **(4 Marks)**

1 (aii) Explain the concept of Anomaly detection? **(4 Marks)**

1 (bi) Why do we separate Data Warehouse from Operational Databases? **(5 Marks)**

1 (bii) Describe the steps involved in data mining when viewed as a process of knowledge discovery. **(4 Marks)**

1(c)i) Explain the concept Decision Trees as it relates to data mining **(4 Marks)**

1(cii) Mention and Describe the characteristics of a data warehouse outside the definition of William Inmon **(4 Marks)**

2(a) Briefly discuss the following data mining issues

- i. Data mining query languages and ad hoc data mining
- ii. Presentation and visualization of data mining results
- iii. Handling noisy or incomplete data **(7 Marks)**

2(b) In data mining, what are outliers? **(4 Marks)**

2(c) What are the methods used in removing outliers? **(4 Marks)**

3(a) What is data Integration? **(4 Marks)**

3(b) The mean, median and mode of a data set are collectively known as measures of...? **(3 Marks)**

3(c) List and explain the two stages involved in evaluation and interpretation. **(8 Marks)**

4(a) Critically appraise data mining application in the Telecommunicator sector. **(7 Marks)**

4(b) What is the implication of data mining algorithms for intrusion detection? **(4 Marks)**

4(c) What would inform your choice of a data mining system? **(4 Marks)**

5(a) What are the Steps to Implement Data Warehouse. **(7 Marks)**

5(b) There are various algorithms used for mining data, outline four (4) only. **(3 Marks)**

5(c) How are concept hierarchies useful in OLAP? **(5 Marks)**

6(a) What are the limitations of traditional misuse detection in intrusion detection systems? **(5 Marks)**

6(b). State the advantage of using anomaly detection strategies for intrusion detection? **(5 Marks)**

6(c). How can data mining algorithms be applied to intrusion detection? **(5 Marks)**