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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

**DAM 301: DATA MINING AND DATA WAREHOUSING Credit Units: 2**

**Instruction**: *Answer Question 1 (25 marks) and any other* ***three*** *questions each carrying 15 marks* **Time:** *2 hours*

1a) Write short notes on data mining ***(4 marks)***

b) Differentiate between data mining and Knowledge Discovery in Databases (KDD) ***(4 marks)***

c) List and explain, in chronological order, the steps involved in Knowledge Discovery in Databases (KDD) ***(10½ marks)***

d) Briefly explain the scope of data mining under the following headings and give at least two illustrative examples of each:

i) Automated prediction of trends and behaviours (***4 marks)***

ii) Automated discovery of previously unknown patterns. (***2½ marks)***

2a) Write short notes on OLAP ***(5 marks)***

b) Enumerate the evolution of data mining under the following table headings: ***(10 marks)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S/N | Evolutionary Step | Business Question | Enabling Technologies | Product Providers | Characteristics |

3) Write short notes on the following providing illustrative example where necessary:

a) Relational databases ***(5 marks)***

b) Transaction databases ***(3 marks)***

c) Multimedia databases ***(2 marks)***

d) World wide web (WWW) ***(5 marks)***

4) Describe the following concept of data mining functionalities:

a) Supervised classification ***(3 marks)***

1. Characterization ***(3 marks)***

c) Clustering ***(3 marks)***

d) Prediction regression ***(3 marks)***

1. Association analysis ***(3 marks)***

5) Extensively discuss the following data mining techniques:

a) Neural networks ***(8 marks)***

b) Multivariate Adaptive Repression Splines (MARS) ***(7 marks)***