DEPARTMENT OF SURVEYING AND GEOINFORMATICS

SCHOOL OF ENVIRONMENTAL TECHNOLOGY

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE, NIGERIA

SEMESTER: Second   **SESSION**: 2018/2019   **TIME**: 2hours

COURSE TITLE: Principle of Geographical Information System II   **COURSE CODE**: SVG 326

INSTRUCTIONS: Answer question 1 and any other three (3) from questions 2 to 5 of your choice

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1a)   An online restaurant booking system allows customers to make a reservation for a table. A table might be reserved by many customers over a period of time.

    i)   Draw an entity-relationship (ER) diagram for this scenario

    ii)   Identify attributes, including primary and foreign keys, for this ER model.

1b)   Explain what is meant by cardinality in the relational model and give three (3) examples.

1c)   Write short note on the following and give example (i) Hierarchical database model (ii) Network data model and (iii) Relational data model

1d)   Clarify the different between the following types of relationships and give example of each (i) many to one (ii) many to many and (iii) one to one   **24marks**

2a)   Explain different between database and database management system (DBMS) and give two (2) applications of database.

2b)   Briefly explain components of database management system (DBMS)

2c)   Explain the following terms and show the relation between keys and attributes in a table format (i) data entities (ii) attributes and (iii) keys   **12marks**

3a)   Explain the difference between data model and entity-relationship (ER) diagrams

3b)   Identify five (5) ways in which a large educational institution such as FUT might use data

3c)   Briefly explain the data modelling in the context of database design   **12marks**

4a)   Define the term tuple

4b)   Enumerate all the symbols used to construct the basic entity-relationship (ER)

4c)   In a sequential order, itemize the steps in building a data model.   **12marks**

5a)   Explain the component of a data model

5b)   Explain the first stage in creating a data model

5c)   Enumerate three (3) advantages and disadvantages of a database   **12marks**