COURSE CODE: CIT 427
COURSE TITLE: Database Systems and Management
TIME ALLOWED: 3 Hours
INSTRUCTION: Answer any five (5) questions

1a. State the three (3) main components of an SQL expression.   (6 marks)

1b. If a section in a shop is denoted by g, write the expression to find the names of all sections in that shop relation.   (4 marks)

1c. Give four (4) reasons why the data definition language is vital in databases. (4 marks)
                                        [Total = 14 marks]

2a. Give a brief explanation of the following attributes:

i.	Entity or Entities	)
ii.	ID	) (2 marks each, =6 marks)
iii.	NMTOKEN or NMTOKENS	)

2b. Write down the four (4) main components of an entity-relationship diagram with their corresponding roles   (8 marks)
                                        [Total = 14 marks]

3a. State the main function and example of the following predefined internal entities:
  i.   &lt
  ii.   &gt
  iii. &amp
  iv.   &apos
  v.   &quot

                    (2 marks each, 2x5=10 marks)

3b. Who is a database administrator?   (4 marks)

                                        [Total = 14 marks]

4a. By means of a well-labelled diagram, explain how weather information can be accessed by means of Web services. (10 marks)

4b. Describe where and how security is maintained in a database. (4 marks)
[Total = 14 marks]

5a. List and explain five duties of a database administrator. (10 marks)

5b. Data manipulation can be described in four (4) different ways, write down these ways. (4 marks)
[Total = 14 marks]

6. Go through the code below carefully and answer the questions that follow:

```xml
 <?xml version="1.0"?>
<freshplay>
<burns>Say <quote>inakwana</quote>,
Nasiru.</burns>
<garki><quote>inakwana,
Nasiru.</quote></garki>
<applause/>
</freshplay>
```

6a. What sort of processing instruction is depicted above (4 marks)
6b. Specify the main role of this instruction (6 marks)
6c. Identify and write the empty element in this instruction (4 marks)
[Total = 14 marks]

7a. Write two (2) main functions of the check clause. (5 marks)

7b. Distinguish between a domain constraint and a key constraint. (5 marks)

7c. Specify two (2) modes of inserting data into a relation. (4 marks)
[Total = 14 marks]