National Open University of Nigeria, 91 Cadastral Zone NnamdiAzikiwe Express Way, Jabi Abuja.

Faculty of Sciences

CIT 844 – Advanced Database Management System (2 Credits)

Total mark is 70 and each question carries $17^{1}/_{2}$marks

Answer 4 Questions in $2^{1}/_{2}$ Hours.

1(a) Explain the term “Relational Database” with examples (7 marks)

1(b) Create Six (6) students’ tuples with the following attributes:

(i) Name
(ii) Address
(iii) Age
(iv) Sex
(v) Phone Number

(6 marks)

1(c) Outline and explain three basic update operations on relational Database ($4^{1}/_{2}$ marks)

2 (a) Describe with diagram the steps involved in database design (7 marks)

2(b) Write short notes on the following:

(i) Data Integrity
(ii) Data Security
(iii) Data Validation
(2marks each)

(c). Define the following Set operations in terms of relationUNION, INTERSECTION, and DIFFERENCE. ($4^{1}/_{2}$ marks)

3(a)What is Distributed Database? (5 marks)

3(b)Describe the term ”Open Source Software” and outline three merits (8 marks).

3(c)Outline three (3) advantages of Object Oriented Database Management System ($4^{1}/_{2}$ marks)

4(a) Write short notes on the following:

(i) Dead lock
(ii) Data recovery
(iii) SQL
(2 marks each)

4(b). Describe a Multimedia Database with its types (7 marks)

4(c)Identifythree (3) causes of data loss from database. ($4^{1}/_{2}$ marks)

5(a) Explain the term “SQL Statement” with examples (6 marks)
5(b) Write short notes on three of the following with examples:

(i) Integrity Constraints
(ii) Encryption
(iii) XML
(iv) Data Warehouse
(v) Data Mining

5(c) Outline three XML syntax Rules

6(a) Explain the term “Transaction” with examples (5 marks)
6(b) Translate the following:

(i) Read authorization
(ii) Insert authorization
(iii) Update authorization
(iv) Delete authorization
(v) Index authorization
(vi) Resources authorization
(vii) Alteration authorization
(viii) Drop authorization

(1 mark each)

6(c) Identify three properties of a transaction.($4^{1}/_{2}$ marks)