

**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**JUNE/JULY EXAMINATION**

**COURSE CODE: DAM 344**

**COURSE TITLE:SEMANTIC DATA MODELLING**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: Answer any four questions.**

1. (a) Define the term Data Modeling.

(b) List and explain the various types of data modeling available, outlining three (3) of its benefits

(c) Draw a block diagram to show the data modeling process.

2. (a) With reference to data modeling, define the following terms;

1. Relationship
2. Identifiers
3. Modifiers
4. Descriptor

(b) Using suitable diagram or flowchart, show the various characteristics of relationship.

(c) Discuss the various characteristics outlined in question 2b above.

3. (a) Briefly explain the concept of Entity.

(b) Enumerate and explain the categories and types of Entity.

(c) Enumerate at least five database security considerations applicable to the use of Semantic data.

4. (a) What is a Data Model.

(b) Enumerate and explain the three (3) kinds of data model instances. Listing at least five

features of a good data model.

(c) Outline and discuss the three types of data model, highlighting the differences between them,

and the limitation of these data model.

5. (a) What is Semantic data Modeling.

(b) Explain the principle of semantic data modeling, highlighting the three key abstractions to

data modeling.

(c) List at least five requirements for a semantic data model, enumerating at least three

applications of this data model.

6. (a) What is a Semantic Schema.

(b) Outline and explain the fundamental components used by semantic models.

(c) Insert the Data Type and the Description to the following MDSYS.SEM\_MODELS.

1. OWNER
2. MODEL\_ID
3. MODEL\_NAME
4. TABLE\_NAME
5. COLUMN\_NAME
6. EXPLAIN
7. LINK\_ID
8. CANON\_END\_NODE\_ID
9. ME\_NODE\_ID
10. CANON\_COLLISION\_EXT

6.(a) Explain the term Semantic Annotation.

(b) Using suitable diagram, explain the principle of:

1. Hypertext
2. Hypermedia

(c) Differentiate between the HM - Data Model and the HC - Data Model. Clearly citing a major

application of HC – Data Model.