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;
i. Relationship
ii. Identifiers
iii. Modifiers
iv. 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.

i. OWNER
ii. MODEL_ID
iii. MODEL_NAME
iv. TABLE_NAME
v. COLUMN_NAME
vi. EXPLAIN
vii. LINK_ID
viii. CANON_END_NODE_ID
ix. ME_NODE_ID
x. CANON_COLLISION_EXT

6.(a) Explain the term Semantic Annotation.

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

i. Hypertext
ii. Hypermedia

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