NATIONAL OPEN UNIVERSITY OF NIGERIA,
91 CADASTRAL ZONES, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA.

FACULTY OF SCIENCES
JULY 2017 EXAMINATION.

COURSE CODE:	**DAM 344**
COURSE TITLE:	**SEMANTIC DATA MODELLING**
CREDIT UNIT:	**2**
TIME ALLOWED:	**3 HOURS**
INSTRUCTION:	**ANSWER QUESTION 1 (25 MARKS) AND ANY THREE (15 MARKS EACH) QUESTIONS. (TOTAL= 4 QUESTIONS)**

1.

(a.) Define Semantic Data Modelling (2 Marks)
(b.) List the three abstractions which are very important for data modelling as stipulated by Smith and Smith (1977) (3 Marks)
(c.) Briefly discuss the properties of Data (list and categorize them) (11 Marks)
(d.) What does the MDSYS.SEM_MODELS view contain? (1 Mark)
(e.) Illustrate using a diagram the WBT-Master architectural. Highlight the basic

2.

(a.) What are the necessary steps you take when creating a model using the SEM_APIS.CREATE_SEM_MODEL procedure (2 Marks)
(b.) In Entity- Relationship What is a relationship? (1 Marks)
(c.) Illustrate the following using well labelled diagram based on the "relationship characterization" (12 Marks)
  i. Unary Relationships
  ii. Binary Relationship
  iii. Ternary Relationship

3.

(a.) List and briefly discuss the modelling methodologies as stipulated by Len Silverston (6 Marks)
(b.) What is Data Normalisation?
(c.) Discuss the Data normalization rules. Present your answer in tabular form (6 Marks)
(d.) Highlight two major advantages of having a highly normalised data schema (2 Marks)

4.

(a.) How are Data modelling techniques and methodologies used to model data? (1 Mark)
(b.) List the types of data modelling as stipulated by Whitten (2004) (2 Marks).
(c.) Highlight the components of the Business Semantics Management Product Suite. (12 Marks)

5.

(a.) Discuss the following:

i. Identifier (I) (3 Marks)
ii. Modifier (M) (3 Marks)
iii. Descriptor (D) (3 Marks)

(b.) List three types of entities and briefly explain them. (6 Marks)

6.

(a.) What is an **entity-relationship diagram** (1 Mark)

(b.) In an entity relationship model attributes can be of three types. List and explain them. (6 Marks)

(c.) In the process of producing a detailed data model of a database, What does the logical data model contains? (2 Marks)

(d.) When discussing Data model specifications, list and explain the two inherent integrity rules which are recognised for type definitions in a semantic data model. (4 Marks)

(e.) Explain/describe the MDSYS.RDF_VALUE$ table (2 Marks)