NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF COMMUNICATION AND INFORMATION SCIENCE

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

**BACHELOR OF SCIENCE HONOURS DEGREE IN LIBRARY
AND INFORMATION SCIENCE**

PART II SECOND SEMESTER MAY 2011 EXAMINATIONS

**ILI 2201: DATABASE APPLICATIONS IN ARCHIVES,
LIBRARIES AND PUBLISHING**

TIME: 3 HOURS

Instructions to candidates

1. Question no. 1 is underline compulsory.
2. Answer any three questions from questions 2 to 6.
3. The total number of questions to be answered is four, including question no. 1.
4. Give equal time to all questions you choose.
5. Each question carries 25 marks.
6. Importance is attached to clear presentation of ideas, good expression and legibility of handwriting.

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1. Consider the set of requirements given below for Georgetown University database, which would enable the University to keep track of students' transcripts; and answer questions 1.1, 1.2 and 1.3 below.
   - The university should keep track of each student's name, student number, national identity number, physical address, postal address, phone, date of birth, sex, class and department.
   - Each department should be described by a name, department code, office number, and phone. Both name and code have unique values for each department.
   - Each course should have a course name, description, course code, number of semester hours, level, and offering department.

    1.1 Define entities and their primary keys   (6 marks)
    1.2 Draw an Entity Relationship Diagram (ERD) to illustrate this scenario   (10 marks)
    1.3 Discuss the access rights of the users, with regards to update, deletion and insertion of records.   (9 marks)

2.1 Explain each of the following terms:
    2.1.1 Data hierarchy   (5 marks)
    2.1.2 Database architecture   (5 marks)
    2.1.3 Meta-data   (3 marks)

2.2 Examine the impact of each of the above on a database system in a library environment.
                                                                                 (12 marks)

3.1 Discuss the components of a database environment.   (15 marks)

3.2 Assess the software facilities that form part of a database system.   (10 marks)

4. Discuss the various ways in which an information centre of your choice can distribute its database.

5. Briefly explain what you understand by the following terms:
    5.1 Hierarchical database model   (5 marks)
    5.2 Relational database   (5 marks)
    5.3 Network database model   (5 marks)
    5.4 Object oriented database model   (5 marks)
    5.5 Entity relationship model   (5 marks)

6. An information centre that you know decides to switch over from an ordinary database system to an integrated library management system. Justify this action.   (25 marks)

END OF PAPER