KABARAK   **UNIVERSITY**

EXAMINATIONS

2008/2009 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT AND INFORMATION TECHNOLOGY

COURSE CODE: BMIT 216

COURSE TITLE: DATABASE MANAGEMENT SYSTEM

STREAM: Y2S1

DAY: WEDNESDAY

TIME: 8.30 -11.30 A.M.
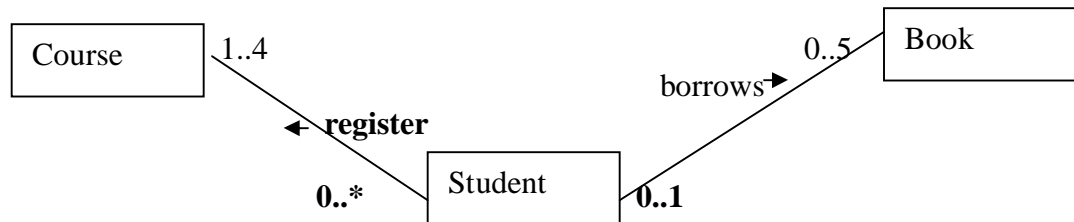
DATE: 10/12/2008

INSTRUCTIONS:

Answer Question 1 and any other three

PLEASE TURN OVER

QUESTIO ONE (20mks)

a) Explain the following terms
  i)   Information
  ii) Knowledge
  iii) data

                                                               3mks
b) explain the term modeling   1mk
c) Explain the two types of data mapping   4mks
d) How are Views used as a database security mechanism   1mk
e) What are the different types of software Development lifecycle models

                                                               2mks
f) What it is conceptual database design   1mk
g) Explain how normalization is used in database design   2mks
h) Give the different symbols that represents the components of a data flow
    diagram   2mk
i) Differentiate between a relationship and a relation in a database model   2mks
j) In the E-R diagram below, state
    i) the multiplicity constraint for the book student relationship   1mk
    ii) The participation of the course when relating with the student   1mk

```
┌──────────┐                                      ┌──────────┐
│ Course   │ 1..4                          0..5   │ Book     │
└──────────┘                                      └──────────┘
         ◄─register              borrows►
                    ┌──────────┐
           0..*     │ Student  │ 0..1
                    └──────────┘
```

QUESTION TWO (10mks)
  a) State the referential and entity integrity rules   2mks
  b) Explain
      i) Data mining   1½ mk
      ii) Data warehousing   1½ mk
  c) Why is Data Warehousing important?   3mks
  d) Differentiate between an associative entity and a weak entity   2mks

QUESTION THREE (10mks)

a) Why would you advice a client to use a dbms instead of a file based system.   5mks
b) What are the functions and services offered by a database management system
                                                               5mks

QUESTION FOUR (10mks)

a) State the steps involved in system development lifecycle   3mks

In a school System the details of the students and that of their guardians are stored manually by filling the following details in a form as shown in the diagram below before being stored in a spring file.

```
┌─────────────────────────────────────────────────────────┐
│  STUDENTS REGISTRATION FORM                             │
│                                                         │
│   Admin   ┌──────┐    Parent  id  ┌──────┐              │
│   Name    ├──────┤    PName       ├──────┤              │
│   age     ├──────┤    PAddress    ├──────┤              │
│   D O B   ├──────┤    occupation  ├──────┤              │
│   CLASS   └──────┘                └──────┘              │
│                                                         │
│                                                         │
└─────────────────────────────────────────────────────────┘
```

  i)   Give two disadvantages of this system   1mk
  ii)   If you are to computerize this system, Draw a suitable E-R diagram showing the possible entities, attributes and relationship(s) most appropriate for the system   4mks
  iii)   Write the appropriate SQL commands that would create the database tables to represent your entities in an SQL server database   2mks

QUESTION FIVE (10 mks)
  a) Explain the three levels of abstraction in a database   3mks
  b) Briefly discuss the different types of data independence   4mks
  c) What are the advantages of using the web-DBMS approach   3mks

QUESTION SIX   (10 mks)
a) Explain the term database security   1mk
b) Give at least 4 database threats and the likely impacts for each of them   2mks
c) What factors should be considered when developing the counter measures to security threats   2mks
d) Explain the term functional dependency   1mk
e) Explain the different degrees of relationships   2mks.
f) Explain the difference between the DDL and DML, give an example for each.   2mks