

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
MAY EXAMINATIONS 2002

SUBJECT: DATABASE CONCEPTS AND DATA PROCESSING
CODE: SCS 1200

INSTRUCTION TO CANDIDATES

Answer any five (5) questions.
Each question carries 20 marks

Time: 3 hours

QUESTION ONE

- (a) Define the following terms as they are used in MS-Access:
- (i) Toolbox
 - (ii) Toolbar
 - (iii) Primary key
 - (iv) Macro
 - (v) Query
- [10]
- (b) What are the advantages of using a DBMS controlled Database? [5]
- (c) What are the benefits of making information available to business organizations? [5]

QUESTION TWO

- a) Explain how a numeric attribute's domain constraints could be set when defining table structure? [5]
- b) How can security be ensured when using a distributed databases? [5]
- c) Describe in detail the distributed data processing technique giving advantages & disadvantages of the method. [10]

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QUESTION THREE

- a) Assume there is an already existing table with the following details of all students in the faculty of Applied Sciences: *Name, Age, Surname* and *Sex*. Describe the steps for creating a query to display *Names* and *Surnames* of all *female* students in the Faculty. [7]
- b) Describe any five component modules of a complete DBMS. [10]
- c) Expand the following abbreviations as they are used in MS-Access
(i) DDL
(i) DML
(ii) SQL [3]

QUESTION FOUR

- a) A table has, among others, an attribute called *RATE_PER_HR*, describe the steps for designing a form that will allow the user to capture the number of hours worked and compute the employee's gross salary and net salary. Note that the net salary is 72% of gross salary. [9]
- b) (i) Distinguish between Internal Rate Of Return and Net Present Value as they are used in information system cost benefit analysis. [4]
(ii) Compute the present value of \$10 000 in two years time if the discount rate is 100%? [4]
- c) Give three ways in which data verification can be implemented [3]

QUESTION FIVE

- a) What are the roles of the Database Administrator as DBMS user? [6]
- b) Describe the main features of a Decision Support System? [10]
- c) Name any four data types available for use in MS-Access. [4]

QUESTION SIX

- a) Give the factors which influence the effectiveness of the conversion of data to information. [10]
- b) How can a macro to divert execution from one form to another be added on a form design? [6]
- c) What are the four main forms in which data can be held in an organization? [4]

QUESTION SEVEN

- a) Describe the symbols used in the following fact recording methods:
 - (i) Data Flow Diagrams
 - (ii) Entity Relationship Diagrams [4]
- b) Explain the three levels(schema) of a DBMS architecture. [9]
- c) What is the purpose of the expression builder in MS-Access? [3]

END OF QUESTION PAPER

GOOD LUCK!