Damelin
correspondence
The Career Development College

JUNE 2013 EXAMINATION

DATE: 12 JUNE 2013

TIME: 14H00 – 16H00   **TOTAL: 100 MARKS**

DURATION: 2 HOURS   **PASS MARK: 40%**

(BS-IS)
INFORMATION SYSTEMS

THIS EXAMINATION PAPER CONSISTS OF 4 SECTIONS:

SECTION A: CONSISTS OF:
   (i)   10 MULTIPLE-CHOICE QUESTIONS   **(10 MARKS)**
   (ii)   5 TRUE OR FALSE QUESTIONS   **(10 MARKS)**
   (iii)   10 MATCHING-STATEMENT QUESTIONS   **(10 MARKS)**
   ANSWER <u>ALL</u> THE QUESTIONS

SECTION B: CONSISTS OF 10 SHORT QUESTIONS
   ANSWER <u>ALL</u> THE QUESTIONS   **(10 MARKS)**

SECTION C: CONSISTS OF 3 LONG ANSWER QUESTIONS
   ANSWER <u>ALL</u> THE QUESTIONS   **(48 MARKS)**

SECTION D: CONSISTS OF 1 INTERPRETATIVE QUESTION
   ANSWER THE QUESTION   **(12 MARKS)**

INSTRUCTIONS:

1.   Read the following instructions *carefully* before answering the paper, as failure to act upon them will result in a loss of marks.
2.   Write your answers in your answer book, which is provided in the exam.
3.   Ensure that your name and student number are clearly indicated on your answer book.
4.   Write your answers in either blue or black ink in your answer book.
5.   Read each question very carefully before you answer it and number your answers *exactly* as the questions are numbered.
6.   Begin with the question for which you think you will get the best marks.
7.   Note the mark allocations for each question – give enough facts to earn the marks allocated.
   Don't waste time by giving more information than required.
8.   You are welcome to use diagrams to illustrate your answers.
9.   Please write neatly – we cannot mark illegible handwriting.
10.   Any student caught cheating will have his or her examination paper and notes confiscated.
   The College will take disciplinary measures to protect the integrity of these examinations.
11.   If there is something wrong with or missing from your exam paper or your answer book, please inform your invigilator immediately. If you do not inform your invigilator about a problem, the College will not be able to rectify it afterwards, and your marks cannot be adjusted to allow for the problem.
12.   This paper may be removed from the examination hall *after* the examination has taken place.

SPECIAL REQUIREMENTS: A RULER AND A PENCIL

<u>**SECTION A**</u>   **(30 MARKS)**

ANSWER ALL THE QUESTIONS

(i)   <u>MULTIPLE-CHOICE QUESTIONS</u>

Choose the correct option for each of the following. Write only the question number and your chosen answer. For instance, if you think that the correct answer for number 1 is (a), then write it as 1. (a).

1.   Which one of the following describes any business transactions conducted electronically?

    (a)   E-commerce
    (b)   I-commerce
    (c)   M-commerce
    (d)   B-commerce

2.   In which stage do we determine how a new system will work to meet the business needs defined during system investigation?

    (a)   Systems implementation
    (b)   Systems design
    (c)   Systems development
    (d)   Systems review

3.   Which one of the following describes a measure of the output achieved divided by the input required?

    (a)   efficiency
    (b)   effectiveness
    (c)   productivity
    (d)   return on investment

4.   Which one of the following is a sequential access storage medium?

    (a)   magnetic tape
    (b)   RAID
    (c)   magnetic disk
    (d)   optical disk

5.   Which one of the following is a built-in scripting facility that is part of every Microsoft Office application?

    (a)   Smalltalk
    (b)   Visual Basic
    (c)   Norton Utilities
    (d)   Java

6.   Which type of computer would run an accounting system for a household or small business?

   (a)   super computer
   (b)   embedded computer
   (c)   PC
   (d)   mainframe computer

7.   Which type of computer would run an airline reservation system?

   (a)   super computer
   (b)   midrange computer
   (c)   PC
   (d)   mainframe computer

8.   Which type of computer would run a weather forecasting system?

   (a)   super computer
   (b)   midrange computer
   (c)   PC
   (d)   mainframe computer

9.   Which type of computer would run a network control system in a department of a large company?

   (a)   super computer
   (b)   midrange computer
   (c)   PC
   (d)   mainframe computer

10.   Which type of computer would run a washing machine control system?

   (a)   super computer
   (b)   embedded computer
   (c)   PC
   (d)   mainframe computer   [10]

(ii)   TRUE OR FALSE QUESTIONS

Indicate whether the following statements are True or False. Motivate all your answers.

1.   Robotics is a subfield of Virtual Reality.

2.   Customer awareness and satisfaction is a measure of the success of an IS system.

3.   Freezing is the first step in managing organisational change.

4.   Program-data dependence is an advantage of the use of a DBMS.

5.   A database entity is a property or characteristic of an attribute.   [5 × 2 = 10]

(iii) MATCHING-STATEMENT QUESTIONS

Match the statements in Column B to the terms in Column A. Write down the answers only, for example 1. (a).

Column A	Column B
1. SAP	(a) a type of organisation structure that may incorporate several different structures at the same time
2. MIS	(b) the primary communication protocol of the Internet
3. DSS	(c) an assigned address on the Internet for each computer
4. Virtual	(d) an example of a popular ERP software package
5. TCP/IP	(e) an organised collection of people, procedures, software, databases, and devices, used to provide information
6. VOIP	(f) an organised collection of people, procedures, software, databases, and devices, used to support problem-specific decision making
7. Matrix	(g) a formalised approach to developing a project schedule
8. URL	(h) technology that provides high-speed connections between data storage devices and computers over a network
9. SAN	(i) technology that enables network managers to route phone calls and fax transmissions over the same network used for data
10. PERT	(j) a type of organisation structure that employs individuals, groups, and complete business units, in geographically dispersed areas

[10]

[30]

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SECTION B: SHORT QUESTIONS   **(10 MARKS)**

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ANSWER ALL THE QUESTIONS

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QUESTION 1

What do we call the process of taking a complex set of data and converting it
into a set of simple two-dimensional tables?   [1]

QUESTION 2

What do we call data manipulation that eliminates rows according to certain
criteria?   [1]

QUESTION 3

What do we call data manipulation that eliminates columns in a table? [1]

QUESTION 4

What do we call data manipulation that combines two or more tables?   [1]

QUESTION 5

What do we call the database process of looking for and fixing inconsistencies
to ensure that data is accurate and complete?   [1]

QUESTION 6

What do we call the database model where all data elements are placed in
two-dimensional tables?   [1]

QUESTION 7

Where do we store detailed descriptions of data used in a database?   [1]

QUESTION 8

Who directs and performs all activities related to maintaining a successful
database environment?   [1]

QUESTION 9

What do we call a database that collects business information from many sources in the enterprise, covering all aspects of the company's processes, products and customers? [1]

QUESTION 10

What do we call a database in which data may be spread across several smaller databases connected via a telecommunications network? [1]

[10]

<u>**SECTION C**</u>**: LONG ANSWER QUESTIONS** **(48 MARKS)**

ANSWER ALL THE QUESTIONS

<u>**QUESTION 1**</u>

(a)   Give the five stages of the traditional Systems Development Life Cycle
      in the correct sequence.   (6)

(b)   Give three questions you would ask in order to assess the risk of a
      system development project.   (3)

(c)   Give three fundamental benefits derived from system development
      projects.   (3)

(d)   What are the three main sections or functions found in a typical
      Information Systems Department?   (3)   [15]

<u>**QUESTION 2**</u>

(a)   Describe a local area network and mention the devices that can be
      attached to it.   (5)

(b)   Describe a wide area network and mention the different transmission
      media used.   (5)

(c)   Explain what a value-added network is.   (2)

(d)   Explain telecommuting and give reasons why companies are using it. (3)

(e)   Identify five different types of network topologies.   (5)

(f)   Briefly explain and differentiate what role the bridge, router, and gateway
      play in a network.   (5)   [25]

<u>**QUESTION 3**</u>

(a)   What is the Internet?   (2)

(b)   Give four popular uses of the Internet.   (4)

(c)   What is an ISP and what main service does it offer?   (2)   [8]

[48]

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SECTION D: INTERPRETATIVE QUESTION   **(12 MARKS)**

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ANSWER THE QUESTION

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QUESTION 1

Draw an entity-relationship diagram for a customer order system taking the
following rules into account:

(a)   A salesperson services many customers.

(b)   Each customer can place many orders.

(c)   Each order includes many line items.

(d)   Each line item refers to one and only one product.

(e)   Each product can be a part of many line items.

(f)   Each order generates one and only one invoice.

(g)   Each invoice contains many line items.

In your drawing label the entities and show the relationships clearly. Mark the
'many' side of a relationship with a crow's foot. You need not label the
relationships.   [12]

[12]

Section A: 30 marks
Section B: 10 marks
Section C: 48 marks
Section D: 12 marks
TOTAL: 100 MARKS