



# TECHNICAL UNIVERSITY OF MOMBASA

## FACULTY OF ENGINEERING AND TECHNOLOGY

### DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

#### UNIVERSITY EXAMINATION FOR:

#### DIPLOMA IN MARINE ENGINEERING

EMR 2113: ICT II

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: 18 Apr 2016**

#### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other **TWO** questions.

**Do not write on the question paper.**

#### Question ONE

- a) Tick **true** or **false** next to each of these statements. (2marks)
- A control program is used to produce a business letter
  - Spreadsheets can be used to produce business accounts
  - Magnetic stripe readers are used for reading data from bank cheques
  - CD ROMs hold more data than DVD ROMs

- b) Give **three** features of a graphical user interface (3marks)

- c) list **two** items which are used to store data (2marks)

- d) Complete each sentence below using **one** item from the list. (2marks)

<b>bar code</b>	<b>DVD ROM</b>	<b>floppy disc</b>
<b>keyboard</b>	<b>magnetic stripe</b>	<b>magnetic tape</b>
<b>monitor</b>	<b>laser printer</b>	<b>zip disc</b>

- Data about the details of a tin of beans is stored on the tin using a
- Data about a bank account is stored on a credit card on a
- A full system backup of 40GB would be made using a
- High quality permanent output can be produced using a

e) The manager of a car showroom uses a database to store data about cars he sells. This is part of the database.

Make	Model	Size of engine	Registration	Price (€)
Opel	Vectra	1.8	VSE 648	19000
Opel	Zafira	2.0	BFK 297	29000
Volkswagen	Golf	1.4	SB A5526	15000
Volkswagen	Polo	1.2	DD B4978	11000
Volkswagen	Jetta	1.6	B G8347	19000
Renault	Megane	1.4	1233 CD 33	17000
Renault	Clio	1.2	6289 XF 54	11000

- i. How many records are there in this part of the database? (1mark)
- ii. How many fields are there in this part of the database? (1mark)
- iii. Give the name of a field that contains numeric data. (1mark)
- iv. Identify the field type of the 'model' field. (1mark)
- v. Which field would be the key field? (1mark)

f) Identify in the column which best describes the type of processing used in the following applications. (4marks)

On-line      Batch      Real time

- i. Robots on a car assembly line
- ii. Producing credit card bills.

- iii. Booking a cinema seat using a computerized booking system.
- iv. Launching a rocket to the moon

g) For each of the following examples, identify the software application that could be used.

- i. suggesting medical diagnoses
- ii. Measuring program storing pupil records in a school
- iii. producing a school magazine
- iv. managing personal finance

(2marks)

## Question TWO

A manager of the head office of a large company has decided to spend money on linking all its computers into an intranet.

- a) What is an intranet and what would be the benefits to the head office of having one? (4marks)
- b) The manager would like her workers to have access to the Internet. She is told that she will need a modem. What does a modem do and why is it needed? (4marks)
- c) The benefit of being connected to the Internet is that information can be sent from head office to the different branches. Some of this information will need to be encrypted.
  - i. Explain is meant by encryption? (4marks)
  - ii. Explain why encryption is needed. (4marks)
- d) A company has asked a customer to sign and send a confidential document immediately. The customer decides not to use post but can't decide whether to send the document by fax or email attachment.
  - i. Give advantages of using a fax. (2mark)
  - ii. Give two disadvantages of using a fax. (2marks)

## Question THREE

A pet shop wishes to offer customers an interactive on-line shopping service.

- a) Other than hardware, discuss in suitable detail, **four** requirements needed to implement such an interactive on-line shopping service. (4marks)
- b) Give **two** advantages to the *customer* of on-line shopping. (2marks)
- c) Give **two** advantages to the *business* of on-line shopping. (2marks)
- d) Describe **two** possible problems when shopping on-line. (4marks)
- e) Explain what is meant by a Database Management System and contrast their advantages and disadvantages. (8marks)

## Question FOUR

A systems analyst has been asked by a doctor to computerize the records she keeps about her patients. He must first of all collect information about the existing system.

- i. Name four methods he could use to collect this information. (4marks)
- ii. After the assistant has typed in the data it will need to be verified. Describe two methods of verifying data. (4marks)
- iii. This data needs to be stored in a database. Describe three features of the structure of the database that the systems analyst will need to design. (6marks)
- iv. Once the whole system has been designed it will need to be implemented. Describe two methods of implementation. (4marks)
- v. After a system is implemented, it is evaluated. Give two reasons why a system should be evaluated. (2marks)

## Question FIVE

- a) Many hackers have tried to infect other people's computers with viruses.
  - i. Describe what is meant by hacking. (2marks)
  - ii. Describe what is meant by a virus. (2marks)
  - iii. Describe how viruses can be prevented. (4marks)

b) Give four actions that the office manager could take to ensure data security. (4marks)

c) Other than cost or security issues, explain in detail **two** factors that could influence the choice of a computer network for a company. (4marks)

d)

A small garage owner wants to use computer software to calculate his staff's wages and also to give quotes to customers for repair work done on their car.

Describe the benefits to be gained from using *spreadsheet software* to solve these problems. Describe the purpose or function of **two** different *formulas* you used in your spreadsheet.

(4marks)