TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MARINE ENGINEERING

EMR 2102: ICT 1

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2HOURS

DATE: Pick Date Dec 2016

Instructions to Candidates
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of Choose No questions. Attempt Choose instruction.
Do not write on the question paper.

Question ONE

a) Tick **true** or **false** next to each of these statements. (4marks)
   i. A control program is used to produce a business letter
   ii. Spreadsheets can be used to produce business accounts
   iii. Magnetic stripe readers are used for reading data from bank cheques
   iv. CD ROMs hold more data than DVD ROMs

b) Point out which best describes the type of application package(s) used in the following applications.

   i. Design of a boat.
   ii. creating a model of a house
   iii. producing memos
   iv. creating students mark sheets

(4marks)

c) point out the functions of each of the following document readers
   i. OMR
   ii. OCR
   iii. Digitizers

iv.   light pen   (8marks)
d) list **four** items which are used to store data   (4marks)
e) Complete each sentence below   (4marks)

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

f) 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)

vi. Why would that field in v above be the key field   (1mark)

Question TWO

a) 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

          (4marks)

b) Select the most suitable data type from the list to represent:
  i. the number of children in a family
  ii. a line of a company's address
  iii. the gender of a person
  iv. somebody's birthday

          (4marks)

c) A large national supermarket company uses a database to store customers' records.
Define **each** of the following functions of the database software and give an appropriate example of how **each** can be used *in this context*:
  i. import/export;   (2marks)
  ii. Query;   (2marks)
  iii. Report.   (2marks)

d) A school teacher keeps records of her students' test scores on a computer. At the end of each term she prints out letters to parents showing these results. She also uses the computer to predict the students' future test scores. Identify three items of software which she could use.
          (3marks)

e) Describe the main advantages to a school or college of using ICT systems to register students.
          (3marks)

Question THREE

a) Describe two health issues caused by the prolonged use of computers. For each health issue give a method of prevention.   (4marks)

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

b) What is an intranet and what would be the benefits to the head office of having one?
          (4marks)

c) 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)

d) 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.   What is meant by encryption?
     ii.   Explain why encryption is needed.   (4marks)

e) 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 one advantage of using a fax.   (2mark)
     ii.   Give two disadvantages of using a fax.   (2marks)

Question FOUR

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

a) Discuss in suitable detail, **four hardware** 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) State and describe the four types of e-commerce   (8marks)

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)