Name……………………………………. Index Number…………… Class:..............

451/2
Computer Studies
Paper 2
(PRACTICAL)
July 2013
2½ hours

KENYA NATIONAL EXAMINATION COUNCIL
SUPA JET EXAMINATION
JULY 2013
Computer Studies
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(PRACTICAL)
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INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number at the top right hand corner of each print out.*
2. *Write your name and index number on the diskette.*
3. *Write the name and the version of the software used for each question attempted in the answer sheet.*
4. *Answer **ALL** the questions.*
5. *All questions carry equal marks.*
6. *Passwords **should NOT be used** while saving in the diskette.*
7. *All answers **MUST BE** saved in your diskette.*
8. *Make a print out of the answers on the answer sheets provided.*
9. *Arrange your printouts and tie/staple them together and use the best fit i.e. landscape or portrait for your printouts.*
10. *Hand in a folder with your name.*

QUESTION ONE

1. The management of **BIMA HARDWARE** has requested you to design a database management system (DBMS) that can be used to update records of its daily transactions.

   Required.

   1. Create a relational database called **BIMA** with the following tables and fields.   (6 Marks)
      a. Customertable

CUSTID
CUSTNAME
CITY

      b. Ordertable.

TRANSID
CUSTID
PRODUCTS
QUANTITY
DATEOFORDER

      c. Producttable.

NAME
PRICEPERITEM

2. Determine the primary keys and the foreign keys in the above tables and create a relationship between them. (4 Marks)
3. Create a form called **frmproduct** to enter the following details in the products table.   (4 Marks)

NAME	PRICEPERITEM
Cement	600
Crown paint	1200
Barbed wire	780
Iron sheet	560
Hammer	450
Padlock	500
Pliers	230
Wire mesh	895

4. Create *one form* called **frmcustomers** to enter the following details in the customers table and orders table.   (8 Marks)

   Customertable

CUSTID	CUSTNAME	CITY
1	Joseph otieno	Nairobi
2	Haman njoroge	Kiambu
3	Mary mutua	Machakos
4	Maina joe	Nairobi

Ordertable

TRANSID	CUSTID	PRODUCTS	QUANTITY	DATEOFORDER
1	1	Cement	10	2/3/2012
2	2	Cement	12	2/3/2012
3	1	Padlock	5	3/3/2012
4	4	Wire mesh	6	3/3/2012
5	3	Hammer	3	12/3/2012
6	2	Cement	2	12/3/2012
7	1	Iron sheet	20	20/3/2012
8	4	Cement	15	20/3/2012
9	3	Crown paint	8	21/3/2012
10	3	Barbed wire	1	21/3/2012

5. Create a query called **datequery** to extract all those items bought after 3rd of march 2012, displaying the customer name, product name, and date of order fields. (3 Marks)

6. Create another query called **Cementquery** to extract all those customers who bought cement in March 2012 and create a field showing how many bags of cement each customer had bought. (3 Marks)

7. Create a grouped report per customer called **customerreport** displaying the product, dateoforder, quantity and price. (5 Marks)

8. Modify customerreport by doing the following.
   a. Create a text box with label **Ttlperorder** next to price and write a function to compute ***total amount per order.*** (3 Marks)
   b. Compute the **subtotal amount each customer has to pay for his orders for the whole month** with a label **subtotal.** (3 Marks)
   c. Compute the **Grand Total** for the sales that Bima hardware has made the whole month with a label **GrandTotal**. (3 Marks)
   d. Insert a header **BIMA HARDWARE MARCH SALES** in the report having font size 20 and center it across the page. (3 Marks)

9. Print the following. (5 Marks)
   a. Customertable, Ordertable, Producttable.
   b. Datequery, cementquery.
   c. Customerreport.

QUESTION TWO

2. **(A)** Type the following passage using a word processing package and save as Networking. Answer the questions that follow.   (31 marks)

COMPUTER NETWORK

A Computer network is a group of computers and other devices connected together by a suitable media.

Advantages of computer Networks

1. Multiple users can communicate, exchange and share information
2. Resource sharing including program, data base, hardware etc. is possible

Communication

By definition communications refers to the transfer of information from one place to another between two individuals using agreed symbols, signs or even human behavior such as nodding. Exchange of information relies on a communication system to convert, amplify and send signal through a common medium. Message, Sender, Medium and Receiver are the essential components of communication systems.

If a system is extended by cascading more communication systems, it is called networked systems.

In case communication involves the sending of information over a significant distance, it must use telecommunications as an aid. By definition, telecommunications refers to the transmission of information between distant locations by some electromagnetic means.

Data communications is defined as the interchange and processing of encoded (digital that is, 1s and 0s) information between distant locations using telecommunications.

Data communications is regarded as the collection and distribution of the electronic representation of information which can be text, voice, graphics or image, from and to remote computing facilities. As information can only be carried to the remote site provided that the information carrier supports that particular type of data transmission, information may undergo data conversion processes if the nature of data signal is incompatible with the characteristics of the signal carrier.

Classification of communication networks

Communication networks are usually defined by their size and complexity. We can distinguish four main types:

- **Local area networks (LAN).** These networks connect computer equipment and other terminals distributed in a localized area, e.g. a university campus, factory, office. The connection is usually a cable or fibre, and the extent of the cable defines the LAN.
- **Metropolitan area networks (MAN).** These networks are used to interconnect LANs that are spread around, say, a town or city. This kind of network is a high speed network using optical fibre connections.
- **Wide area networks (WAN).** These networks connect computers and other terminals over large distances. They often require multiple communication connections, including microwave radio links and satellite.

COMPARISON AMONG DIFFERENT TOPOLOGIES

Below are the advantages and disadvantages of various LAN topologies.

Type	Advantage	Disadvantage
Star	Simple and easy to identify fault	Failure of central node causes disaster
Irregular (Mesh)	Immunity to bottleneck and failure problems	Expensive to provide an alternative routing
Bus	Simple to control traffic flow	Only a single communications channel is required to service all the nodes
Ring	Simple to implement	One channel is required to service all

TRANSMISSION MEDIA

Transmission can be by cable or wireless methods. There are 3 common types of cable:

- **Twisted pair,**
- **Co-axial**
- **Fiber optic.**

Wireless transmission includes:

- Microwave transmission.
- Satellite transmission.
- Radio waves transmission.
- Infrared transmission.

TWISTED PAIR

•Consists of two insulated copper wires arranged in a regular spiral pattern to minimize the electromagnetic interference between adjacent pairs
•Often used at customer facilities and also over distances to carry voice as well as data communications.

TWISTED PAIR ADVANTAGES
- Inexpensive and readily available
- Flexible and lightweight
- Easy to work with and install

TWISTED PAIR DISADVANTAGES
- Susceptibility to interference and noise
- Attenuation problem
- For analog, repeaters needed every 5-6km
- For digital, repeaters needed every 2-3km
- Relatively low bandwidth (3000Hz)

CO-AXIAL CABLE

- Used for cable television, LANs, telephony
- Has an inner conductor surrounded by a braided mesh
- Both conductors share a common center axial, hence the term "co-axial"

CO-AXIAL ADVANTAGES
Higher bandwidth
- 400 to 600Mhz
- Up to 10,800 voice conversations
- Can be tapped easily (pros and cons)
- Much less susceptible to interference than twisted pair

CO-AXIAL DISADVANTAGES
- High attenuation rate makes it expensive over long distance
- Bulky
- Greater capacity (bandwidth of up to 2 Gbps)
- Smaller size and lighter weight
- Lower attenuation
- Immunity to environmental interference
- Highly secure due to tap difficulty and lack of signal radiation

FIBER OPTIC CABLE

Relatively new transmission medium used by telephone companies in place of long-distance trunk lines
Also used by private companies in implementing local data communications networks
Require a light source with injection laser diode (ILD) or light-emitting diodes (LED)

ADVANTAGES OF FIBER OPTIC
greater capacity (bandwidth of up to 2 Gbps)
smaller size and lighter weight
lower attenuation
immunity to environmental interference
highly secure due to tap difficulty and lack of signal radiation

DISADVANGES OF FIBER OPTIC
expensive over short distance
requires highly skilled installers
adding additional nodes is difficult

(B) Required:

i. Centre and double underline the title Computer Network   (3 marks)

ii. Convert the paragraphs Under **Communications**. Into hanging indent.

(6 marks)

iii. Insert your name into the passage as a footer so as to appear © *your name*.

(4 marks)

iv. Convert the paragraph under Classification **of communication networks** to two columns and justify them.   (4 marks)

v. Print the document networking   (2marks)