KCSE PREDICTOR

SET 1

COMPUTER

A SERIES OF KCSE PREDICTION COMPUTER QUESTIONS!

FOR MARKING SCHEMES

CONTACT 0705525657

(PREDICTOR TRIALS 1-12)

MR ISABOKE 0705525657

mwalimuepublishers@gmail.com

KCSE PREDICTOR 1

451/1

Computer Studies

Paper 1 [Theory]

Time: 2 ½ Hours

SECTION A [40 MARKS]

*Answer **all** questions in this section*

1. Outline **three** distinctions between a super computer and microcomputer. [3 marks]

2. State four features of fifth generation computers. [4 marks]

3.(a). Explain **two** uses of forms in database design. [2 mark]

(b). i). Define the term control as used in report and form design. (1 mark)

(ii). Explain briefly the difference between bound and unbound controls. (2marks)

4. State any **two** differences between function keys and special keys of a keyboard. [2 marks]

5. In system development, testing is one of the critical stages. Give **three** reasons why the testing phase is critical to the systems developer. [3 marks]

_____

_____

_____

6. Write the following abbreviations in full. [3 marks]

i). BCD

ii). ASCII

iii). EBCDIC

7. State **two** properties that an operating system display about a file. [1 mark]

_____

_____

8. Differentiate between Computer Aided Design CAD and Computer Aided Manufacture (CAM). [4 marks]

_____

_____

_____

_____

9. (a). Distinguish between a primary key and index key as used in databases. [2 marks]

_____

_____

_____

(b). Explain the relevance of foreign key in a database entity. (1 mark)

_____

_____

10. List **three** differences between laser printer and a dot matrix printer. [3 marks]

_____

_____

_____

11. Name an input or output device used in the following tasks. (2 mark)

a). Capturing still images

_____

(b). Printing detailed architectural designs

_____

(c). Playing flight and driving games

_____

(d). Capture data at ATM

_____

12. What is the use of the search and replace feature in a word-processor. (1 mark)

_____

_____

13. State two ways in which a computer may be used in efficient running of a hospital. (2 marks)

_____

_____

14. The formula = $A4*C$3 was entered in cell D4. What will be the formula if it is copied to cell F10. [1 marks]

_____

_____

_____

15. Name any three methods that can be used to test a program of errors. (3 marks)

_____

_____

_____

SECTION B [60 MARKS

Answer question 16 and any other three questions from this section.

16.[a]. Design a flowchart for a simple program that can be used to categorize people according to age. If the person is above or equal 18 years, output "Adult" otherwise output "Young". (8 marks)

(b).What is the difference between looping and selection? (2 marks)

_____

_____

_____

_____

[c]. Name the stage of program development cycle when: [2 marks]

(i). A user guide would be written

_____

(ii). A programmer dry-turn the code

_____

(iii). System charts would be drawn

_____

(iv). Staff training is done

_____

(d). State the three translators used in programming. (3 marks)

_____

_____

_____

17.(a). Define the term data communication. (1 mark)

(b). Explain the following terms as used in data communication. (2 marks)
(i). Bandwidth

(ii). Attenuation

(c). Explain the following three types of computer networks. (3 marks)

i). LAN

ii). MAN

iii). WAN

(d).i). What are robots? (1 marks)

(ii). Outline any four advantages of using robots in industries over human beings. (2 marks)

(e). Describe the following communication modes giving an example in each case. (6 marks)
(i). Simplex

(ii). Half duplex

(iii). Full duplex

18. [a].List two characteristics of good information. [2 marks]

(b(i). What is a database management system? [1 mark]

(ii). State and explain three database models. (3 marks)

c). Describe the following types of files.

(i). Master file (2 marks)

(ii). Backup file (2 marks)

(iii). Transaction file (2 marks)

d). Explain the file organization methods given below.

(i). Serial (1 mark)

(ii). Indexed sequential (1 mark)

(iii). Random (1 mark)

19. (a). A shopkeeper of a small shop at Longisa has bought desktop computer to assist him in performing his business activities. He has been advised that before he can use it to work he has to install it with an operating system. State any six factors to consider when choosing the operating system. [6 marks]

b). With reference to disk management explain what is meant by the terms below.

i). Formatting (1 mark)

ii). Defragmentation (1 mark)

iii). Disk partitioning (1 mark)

c). Give any two reasons that may make the shopkeeper to partition the computer disk. [2 marks]

(d). The shopkeeper one day switched on the computer and experienced a number of problems with windows operating system that he had installed. The problems included failure to load the operating system during the booting. After several trials of switching on the computer, it hangs so often alongside abnormal restarting. State any four possible causes for the computer's behaviour. (4 marks)

20. (a) Describe the octal number system. (2 marks)

(b). Convert each of the following to the number system indicated:

i). 111.101_2 to decimal; (3 marks)

(ii). 14.6875_{10} to binary [4 marks]

(c). Convert the number -17_{10} into 8-bit:

(i). signed magnitude representation; (2 marks)

(ii). two's complement (2 marks)

(d). Perform the arithmetic operation. (2 marks)

$110.11_2 + 11.011_2$

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KCSE PREDICTOR 1

451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
TIME: 2 ½ HOURS

1.

(a). Type the following letter as it appears in a word processor. Use the mail merge feature to produce copies of the same letter to the persons whose details are given below. (12 marks)

MWANGAZA HIGH SCHOOL

P.O. BOX 4800

KERICHO

8TH FEBRUARY 2020

<NAME>,<ADMNO>,

<ADDRESS>

<TOWN>

Dear <NAME>

REF: 2019 KCSE RESULTS.

I am happy to inform you that the NOV-DEC Examinations are out. Kindly arrange to visit our school on <Date to visit> at 9.00 a.m in order to know the details. Remember to carry your original KCPE certificate and examination registration card bearing the index number.

Yours's truly,

Head teacher

Data source (List of Candidates)

Name	Adm.No	Address	Town	Date to visit
Mark Otieno	8074	P.O. BOX 24	Sondu	02/03/2020
Kevin Kirui	8189	P.O. BOX 172	Kericho	08/03/2020
Bernard Soi	8065	P.O. BOX 84	Bomet	24/03/2020

Required:

i) **Save** Main document as Main Doc (1 mark)

ii) **Save** Data source as Data source (1 mark)

iii) **Change** the addresses and reference font size to 14pts (1 ½ marks)

2. Perfect Pizza Factory manufactures pasta for distribution to restaurants in Nairobi. Assuming that you are now working for the factory and have been given the following sales data:

	A	B	C	D	E	F	G	H	I
1	Restaurants	July	August	September	October	November	December	Total product sales	Average
2		34567	45671	89650	67222	56113	96282		
3	Nankos	100000	97600	82199	105999	140664	190654		
4	Burgees	96543	97600	82199	105999	140663	190654		
5	Kenge	65000	97600	82199	105669	140663	190654		
6	Tika	103456	97645	82297	105669	140220	175000		
7	Appetos	76899	85400	96709	101324	140882	181230		
8	Marries	98000	97600	82199	105999	140663	190654		
9	Generals	25000	19654	15222	8000	5602	200		
10	My Café	86777	75432	84366	105999	55678	201345		

11	Shooters								
12									
13									
14	Total Monthly sales								

(iv). **Underline** the reference ($^1/_2$ mark)

(v). **Merge** the letter onto main document so as to produce copies for all the three candidates and save it as 'Results 2019'. (6 marks)

(vi). **Print** the letters (3 marks)

(b). **Type** the following text in a word processing software. (22 marks)

INTRODUCTION TO COMPUTERS & OPERATING SYSTEMS

A computer is a machine or an electronic device that can solve problems by accepting data, performing certain operations on that data (processing) and presenting the results of those operations (Information) Basic characteristics that distinguish a computer from other information processing devices:-

(i) A computer is electronic- That is, all it processing operations are carried out with electrical signals

(ii) A computer can store information for future reference. This is done on temporary basis with memory circuits and permanently with storage devices such as magnetic disks and tape.

(iii) A computer is programmable – unlike other devices built to perform a single function, a computer can be instructed or programmed to perform a variety of tasks.

HOW A COMPUTER OPERATES

Converting the data (raw facts) into information (Organized, usable form) is called data processing.

Data get into the system by means of an input device.e.g keyboard then the computer performs the necessary calculations or manipulations on the data and finally the organized information is displayed by an output device e.g. a monitor.

FUNCTIONS PERFORMED BY A COMPUTER

Although computers have many applications, they can perform only three basic tasks.

(i). Arithmetic functions on numeric data (adding, subtracting, multiplying and dividing)

(ii). Test relationships between data items (by comparing values)

(iii). Store and retrieve data

These skills are really no more than people can do, but the computer can accomplish the task more;

3. Faster
4. Accurately
5. Reliably

Required:

(a). **Align** the title to the centre and underline it. (1 marks)

(b). **Add** border to the title (2 marks)

(c). **Replace** all the Roman numbers with bullets. (2 marks)

(d).

(i) Insert the footer "End of Term One Examination 2020". (2 marks)

(ii) Insert the header "Your name and index No" (2 marks)

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KCSE PREDICTOR 2

451/1
COMPUTER STUDIES
Paper 1 (theory)
2 ½ hours

SECTION A (40 Marks)

Answer all the questions in this section

1. Explain disk formatting

(2mks)

2. (a) Explain why the following controls should be implemented for computer based system (2mks)

(i) Data Back- ups

-

(ii) Password

(b) List two examples of utility software in operating systems (2mks)

3. Differentiate between **source** code and **object** code (4mks)

4. The cells P3 to P20 of a worksheet contain remarks on students ' performance such as very good, good, fair and fail depending on the average mark. Write a formula that can be used to

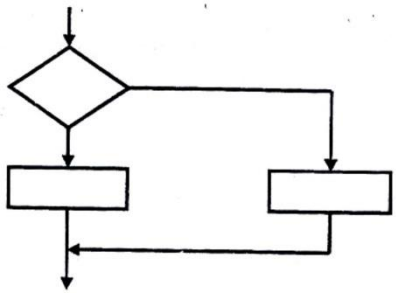
count ALL students who have the remark "very good".

(3 mks)

5. (a) State the purpose of registers in a computer system (1 mk)

6. Give Three advantages of using GUI based operating system over a command line interface (3mks)

7. (a) Name the control structure depicted by the flowchart below (1 mk)



(b) Explain the following terms as used in system implementation (2 mks)

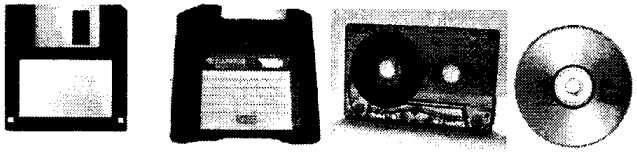
(i) **parallel running**

ii) **Direct change over**

.

8. (a) Name two methods of representing **signed** numbers in computers (2 mks)

(b) Identify the **four** types of storage media shown below. (2 marks)



i **ii** **iii** **iv**

c) Compare the storage device (i) and (iii) above. (1 mark)

9. Differentiate between **Random** and **indexed-sequential** file organization methods (2mks)

10. Name two types of relationships that can be applied in database design. (2mks)

11. Explain the following terms as used in word processing: (3 mks)

a) Indenting

b) Alignment

c) Word wrap

12. Outline two ways in which computers can be applied in hotels. (2mks)

13. a) Explain binary coded decimal code of data representation. (1mk)

b) Define the term firewall. (1 mark)

14. Arrange the following data units in ascending order of size.

BYTE, FILE, BIT, NIBBLE

(2mks)

15. State two health issues that may result from prolonged use of computers.

(2mks)

SECTION B **(60 MKS)**

ANSWER QUESTION **16** *AND* ***ANY*** *OTHER* ***THREE*** *QUESTIONS FROM THIS SECTION*

16. a) State the stage of program development in which:

(4mks)

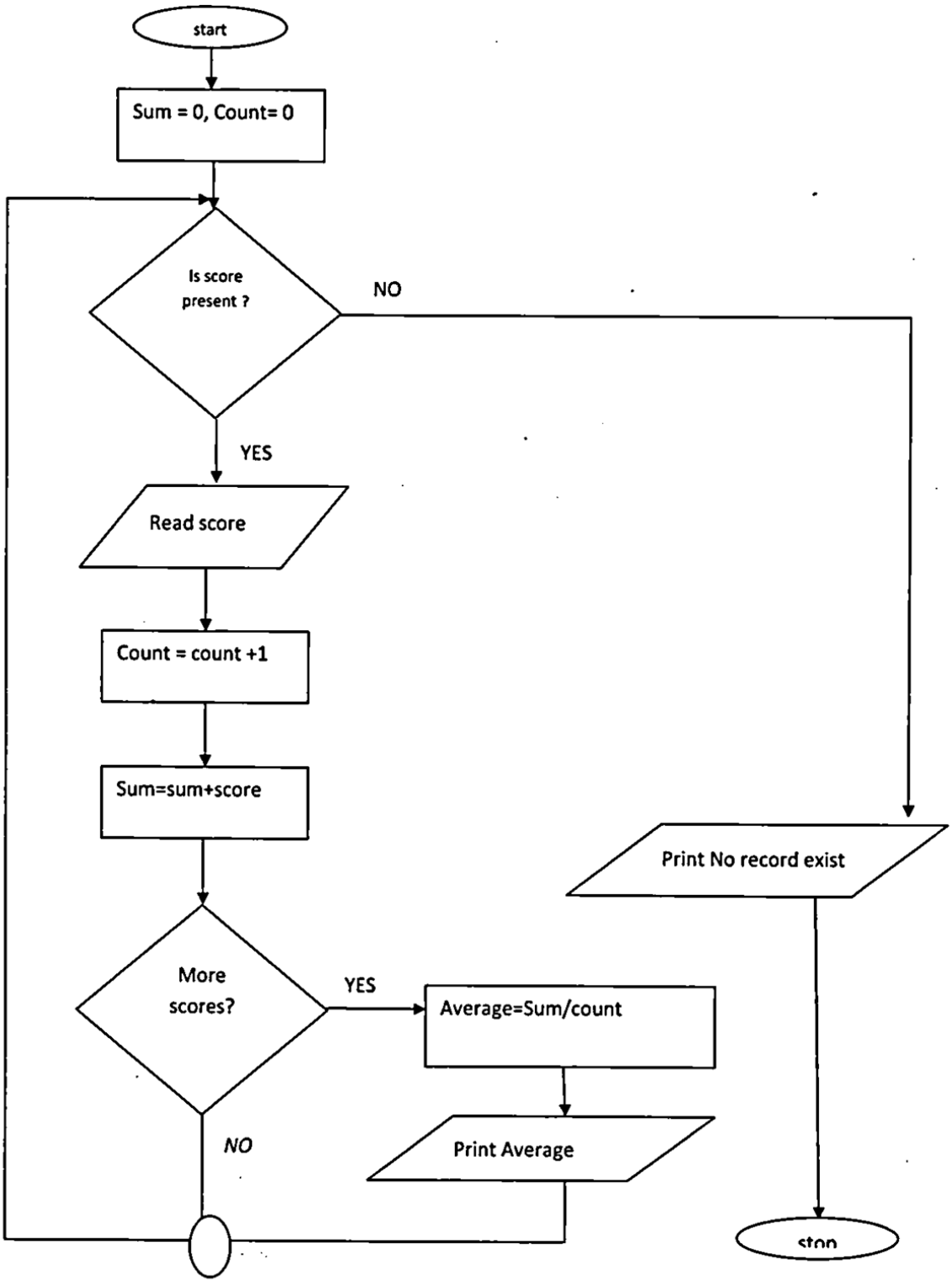
i) A flowchart would be drawn

ii) The programmer would check whether the program does as required program

iii) The user guide would be written

iv) The user guide would be written

Study the flowchart below and answer the questions that follow.



b) Translate the following flowchart into a pseudo code. (8 marks)

c) Assuming the following score are entered 0, 20 and 60 respectively what would be output from the flowchart.

(3 marks)

17. a) Convert each of the following binary numbers to decimal equivalent given that the left most digit is a sign bit.

(4 marks)

i) 00101101_2

ii) 11001001_2

b) Convert the decimal number 0.42 to 6 bit binary notation. (4 marks)

c) Using two's complement, subtract 11_{10} from 8_{10}, leaving your answer in binary notation. (3 marks)

d) Perform the following binary operation. (2 marks)

$11001_2 + 1101_2 + 101_2$

e) Using place value method, convert 45_{10} to its binary equivalent. (2 marks)

18. a) What is virtual reality? (1 mark)

b) Explain the following interactive sensory equipment used in virtual reality. (2 marks)

i) Head gear

ii) Body suit

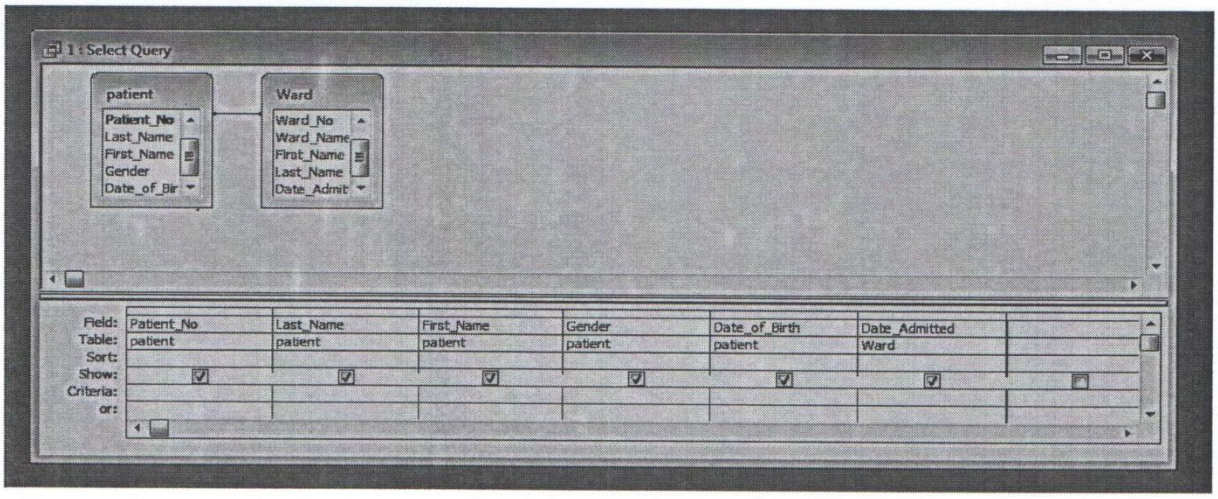
c) What is Artificial intelligence? (1 mark)

d) State and explain **three** components of an expert system. (6 marks)

e) Explain method of information gathering in system development. (3 marks)

f) List **two** application area of virtual reality. (2 marks)

19. a) The following is an extract of a select query (QBE) in Microsoft Access about hospital database.



i) Other than select queries name **two** other queries used in databases. (2 marks)

ii) Write an expression that will return only those patients who are 20 years' old. (3 marks)

b) Differentiate between bold and unbold controls as used in database forms. (2 marks)

c) Give **two** reasons why input screens are better data entry designs than entering data directly into a table.

(2 marks)

d) The figure below is an extract of a worksheet containing information on household items. Use it to answer the following questions:

	A	B	C	D	E	F
1	**Item description**	**No of units**	**Cost per unit**	**Total cost**		
2	Maize flour	20	210			
3	Tea leaves	64	185			
4	Sugar	77	149			
5	Salt	28	25			

i) Write a formula to calculate the total cost of sugar. (1 mark)

ii) The prices of all items increased by 10% and the value 10% is placed in cell B8. Using cell addresses with absolute referencing only, write a formula to calculate the new unit of the salt.

(2 marks

iii) Write a function to display the number of cells in which the cost per unit is equal to 25. (2 marks)

iv) Write a function to display the least total cost for all items. (1 mark)

20. A school computer laboratory is scheduled to undergo major renovations.
The lab is scheduled to receive new computer whose specifications are given below:-
Pentium IV 2.8GHz processor
40GB HDD
3½ FDD
256MB RAM
56 x CD ROM
17"SVGA TFT monitor
The computers are going to be networked and will be able to browse the internet.

a) Explain what is meant by the terms:- (2 marks)

i) FDD

ii) HDD

iii) SVGA

iv) TFT

b) The computer is to be networked, name **one** extra device that should be fitted on every computer to enable this to happen. (1 mark)

c) The computer is to receive internet facilities through the server on a dial; up system. Name and describe the function of a special device that needs to be connected to the server to complete the connection.

(1 mark)

d) i) The school has to apply star topology to link up the computer. List **two** advantages of this type of topology.

(1 mark)

ii) Name the central device used to connect the computers in this topology. (1 mark)

e) List **two** other types of topologies that the school could have opted for. (1 mark)

f) List **four** advantages of using a network. (2 marks)

g) i) Data transmission via the internet is done using a mode known as packet switching. Describe this data transmission mode.

(1 mark)

ii) Name **two** other modes of transmission. (1 mark)

h) i) The school's LAN is done using UTP cable. List **two** advantages of using this type of cable.

(1 mark)

ii) List **two** advantages of using fibre cable in networking. (1 mark)

i) Data flows in the school's LAN in a duplex manner. Discuss **two** other types of data transmission in network giving examples. (2 marks)

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KCSE PREDICTOR 2

451/2 COMPUTER STUDIES

Paper 2 (PRACTICAL)

2 ½ hours

1. The following table contains details of Baharini Girls school **(50MARKS)**

ADM NO	Stud name	DOB	KCPE MARKS	RECEIPT NO	Fees Paid(kshs)	Fees Bal(kshs)	House No	House Name	House Capacity
1001	Alice K	7/4/1999	380	101	20000	5000	H20	simba	200
1050	Lilly O	2/3/2002	350	894	18000	7000	S08	chui	150
1202	Mary	8/10/2000	400	500	23000	2000	P30	Kifaru	180
1025	Juliet	4/4/2000	358	258	25000	0	H20	Simba	200
1200	Joan	5/1/2001	398	259	15000	10000	S08	chui	150
1278	Milly	3/4/1998	402	200	15000	10000	H20	simba	200
1201	Linet	2/7/1998	356	205	20000	5000	P30	kifaru	180
1203	Lisper	9/5/2001	403	209	25000	0	S08	chui	150

REQUIRED

i. Create a database file that can be used to store the above data. Name the file Baharini school database. (2mks)

ii. Create Three tables, one for **student details**, **Accounts table** and **dormitory table** (11 mks)

iii. Create a relationship between the three tables (3mks)

iv. Using appropriate forms, Enter the information given into the three tables (15mks)

v. Create a query for " **all students housed in Chui"** (3mks)

vi. Design a "**current age query"** to display current ages of all the students (5mks)

vii. Create a report "**Hefty Balances"** showing students with fees balances of more than 10000kshs (3mks)

viii. Create a report to show all students admitted in the school (3mks)

ix. Print,The **three tables**,**Hefty balances report** and **all students housed in Chui report** (5mks**)**

(50MARKS)

2. QUESTION 2

Use a spreadsheet to manipulate data in the table below.

Adm No	Name	Stream	Comp	Art	Bus	Eng	Mat	Student mean	Rank
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Odhiambo	H	75	78	45	65	56		
C008	Okunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

6. Enter the data in all bordered worksheet and auto fit all column. Save the workbook as **mark 1** (15mks)
7. Find the total marks for each subject (3mks)
8. Find total for each subject per stream using a function (5mks)
9. Find mean mark for each student using a function (5mks)
10. Rank mean student in descending order using the mean (5mks)
11. Create a well labeled column chart on a different sheet to show the mean mark of every student. Save the workbook as **mark 2.** (7mks)
12. Using **mark1,** use subtotals to find the average mark for each subject per stream. Save the workbook as **mark 3** (7mks)
13. Print **mark 1,mark 2** and the **chart** (3

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KCSE PREDICTOR 3

451/1
COMPUTER STUDIES
PAPER 1
(Theory)
TIME: 2 ½ HOURS

1. Identify three advantages of using computers in banking (3mks)

2. List three facilities that will ensure proper ventilation in a computer lab (3mks)

3. Give two main functions of a computer input device. (2mks)

4. What are turnaround documents? (1mk)

5. Using examples, distinguished between:

   (i) Primary and secondary storage (1mk)

   (ii) Fixed and removable disks (1mk)

6. Ann connected new multimedia speakers to her computer and tried to play her favorite music CD, but no sound came out. Suggest two problems that might have occurred (2mks)

7. Explain the following considerations when purchasing software (2mks)

   (i) Authenticity

   (ii) Portability

8. Give three ways in which operating systems are classified into (3mks)

9. Peter tried to retrieve a document file following all the steps correctly. The filename did not appear in file list box. State three causes for this. (3mks)

10. State the use of the following objects in databases. (3mks)

    i) Tables

    ii) Forms

    iii) Query

11. i. Explain the meaning of the following as used in computer programming. (2mks)

    a. Syntax

    b. Semantic

    ii.List three ways in which data integrity can be compromised. (3mks)

12. i. Mobile phones have become common ICT devices. Explain some of the powerful capabilities that come with some of the latest embedded operating systems (3mks)

ii. List two disadvantages of fiber optic cable over twisted wires. (2mks)

13. Describe any two types of data processing methods. (2mks)

14. State two advantages of USB port over the parallel port (2mks)

15. Differentiate between the terms signal Attenuation and Noise as used in data communication. (2mks)

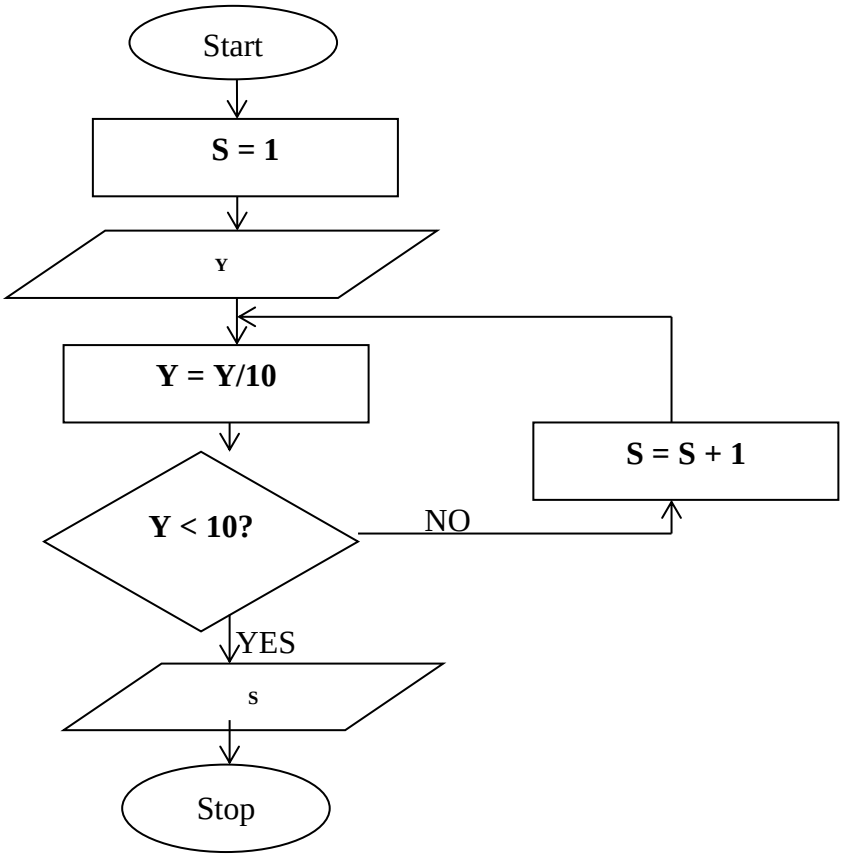
SECTION B

Answer question 16 and any other three questions in this section

16. a) State three advantages of low -level languages (3mks)

b) Give two differences between a compiler and an interpreter. (2mks)

c) i) Study this flowchart and use it to answer the questions that follow.



I. Give the expected output from the flowchart when the value of Y is:

(i) 48 (1 marks)

(ii) 9170 (2 marks)

(iii) – 800 (2 marks)

II. Write the pseudo code that can be used to create a program represented by the above Flowchart.

17. a. Use two complement to perform the following arithmetic operations

i) $15_{10} - 12_{10}$ (4mks)

ii) $10111_2 - 1011_2$ (3mks)

b) 1011_2 is a ones complement binary representation of negative number using four bits work out the likely positive equivalent in base 10. (4mks)

c) Convert the decimal fraction 10.375_{10} into its binary equivalent (3mks)
Whole numbers

d) Assuming the existence of base five, list the numbers used in the number system (1mk)

18. a) State and explain two disadvantages that will come about if a network was to be installed in your school. (4mks)

b) Discuss two disadvantages of wireless networks. (4mks)

c) Write the following abbreviation in full. (2mks)

i) F.T.P

ii) H.T.T.P

d) With the aid of a diagram, discuss Hybrid topology. (4mks)

e) Discuss four advantages of network. (2mks)

19. a) Explain why a computer is able to display the correct time and date when it has just been switched on. (2mks)

b) Discuss two types of special memories found in a Computer System. (4mks)

c) i) Define a Bus with reference to a computer system. (1mk)

ii) List two examples of buses. (2mks)

d) Distinguish between a power cable and interface cable. (2mks)

e) Differentiate between the different types of RAM. (4mks)

20. a) i) Define a system. (1mk)

ii) Explain system entropy. (2mks)

b) State three circumstances that can lead to development of information systems (3mks)

c) Distinguish parallel changes over from straight change over as used in system implementation. (2mks)

d) Discuss two fact finding methods. (4mks)

e) Differentiate an open system from a closed system. (2mks)

f) List two responsibilities of a system analyst. (2mks)

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KCSE PREDICTOR 3

Computer Studies
Paper 2
(PRACTICAL)

2½ hours

1. (a) Using a Word Processing package, type the congratulatory note below as it appears and save it as CONGRATS. (15mks)

MAGS Software Co. Ltd
P.O. Box 5678
Kericho
(Insert today's date)

<<First Name>><<Last Name>>
<<Address>>
Dear**<<First Name>>**

RE: CONGRATULATIONS

Due to your hard work and sacrifices you made this year, the company wishes to congratulate you for emerging the best in our internal interview that you applied for. Your new position will be **<<Position>>** and your new salary scale will be**<<Amount>>.**

Yours faithfully,

Gregory Bruce
PERSONNEL

(b) Create a data source with the following details and use it with the note you have

just typed to generate personal notes to the company's named personnel. Save it as Details. (15mks)

George Kinoti	Wilberforce Kenya	Henry Odongo
P. O. BOX 5678	P. O. BOX 5678	P. O. BOX 5678
Kericho	Kisumu	Kilgoris
Software Developer	ICT Officer	Database Admin
Ksh.125000	Ksh.125000	Ksh.125000

Grace Akinyi	Beth Mugo	SharonWangoi
P.O. BOX 5678	P. O. BOX 5678	P. O. BOX 5678

Nakuru	Migori	Nandi-Hills
System Admin	Secretary	Accountant
Ksh.120000	Shs.30000	Shs.45000

(c) Insert data fields in main document and generate the notes for the employees.(14mks)

(d) Print the notes.
(6mks)

2. (a) Create a database called **SCHOOL**. (2 Marks)

(b) Create three tables **EXAMINATION**, **DOS** and **BOARDING**with the fields as shown below.
(10Marks)

(c). Create a relationship between the three tables and enforce integrity.
(6Marks)

(d). Enter the data items in the given tables three tables.

(15Marks)

EXAMINATIONS

Admission Number	Mathematics	English	Kiswahili	Biology
1	45	67	90	23
10	45	89	90	20
2	45	70	80	45
3	89	90	90	20
4	78	9	90	50
5	67	89	60	90
6	67	90	7	80
7	34	78	70	90
8	23	50	38	90
9	23	15	67	20

DOS

Admission Number	SName	Other Names	KCPEMark	Year of KCPE
1	PETER	BARASA	327	2007
10	JOHNSON	SUK	250	2001
2	ALEX	OJWANG’	340	1998
3	BELINDA	ESTHER	250	2008
4	BRAMWEL	RAYMOND	450	2007
5	ALEX	WAMWANA	410	2003
6	JANET	KILONZO	400	2000

7	MATHEW	KARIUKI	450	1999
8	NASIMIYU	CATHEEN	290	2003
9	KIMATHI	JOHN	3000	2001

BOARDING

Admission Number	UNIFORM	TOOL	TOOL NAME
1	No	12	JEMBE
10	Yes	20	JEMBE
2	No	11	PANGA
3	Yes	1	SLASHER
4	Yes	111	JEMBE
5	No	15	RAKE
6	Yes	22	BASIN
7	Yes	11	BROOMS
8	Yes	90	RAKE
9	Yes	23	BUCKET

(e) Design a query that would display the following fields as shown below and write down the formulae for getting the total score and criteria for extracting the records below (10 Marks)

ADMIN

Admission Number	UNIFORM	SName	KCPEMark	Mathematics	English	Kiswahili	TOTAL SCORE
1	Yes	BELINDA	250	89	90	90	269
10	Yes	BRAMWEL	450	78	9	90	177
2	Yes	JANET	400	67	90	7	164

(f) Design a report that would sort the following in ascending order in the order of the following fields, Total score, KCPE Score, SName the Admission Number and the report should display all the fields. Save the report as administration (5Marks)

(g) Print, administration and admin (2Marks**)**

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KCSE PREDICTOR 4

451/1

COMPUTER STUDIES
PAPER 1
THEORY
TIME 2 ½ HOUR

This paper consists of **9** printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

1. Name the parts labeled in the diagram below of a page layout properties [3 marks]

i ii iii

i- _____

ii- _____

Iii-_____

2. Explain briefly how an uninterruptible power supply (UPS) may help to protect a computer system and its data. [1 mark]

_____

_____

_____

_____

3. How is data verification different from data validation? [1 mark]

_____

_____

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_____

Give one example of data validation technique [1 mark]

_____

___

Give one example of data verification technique [1 mark]

_____

___

4. What kind of program is normally contained in a ROM chip and Explain briefly the main purpose of such a program. [2 marks]

_____

_____

_____

_____

5. Distinguish between system software and application software. [2 mark]

6. Give the similarities between optical mark readers and optical character readers. [2 marks]

7. In word processing, distinguish between text insertion and overtyping. [2 marks]

8. Explain, using examples where appropriate, the meaning of these computer terms.

   (i) interrupt [2 Marks]

   (ii) buffer [2 Marks]

9. Explain the following spreadsheet concepts:

   (i) Automatic Recalculation. [1 mark]

   (ii)What if analysis [1 mark]

10. Explain briefly why the advancement of computer technology has caused environmental hazards. [2 marks]

    (i)What is telecommuting? [1 mark]

(ii)State **four** benefits of telecommuting. [2 marks]

(ii)How is e-commerce different from e-business? [1 mark]

11. (i)What is a coprocessor? [1 mark]

(ii)How does parallel processing work? [1 mark]

(iii)What is pipelining? [1 mark]

12. (i)What is a driver program? [1 mark]

13. (ii). Give **one** example of hardware device that may serve more than one purpose (e.g., input and output). [2 marks]

14. (i)How is a patent different from a trademark? [2 marks]

(ii)What is the difference between unauthorized access and unauthorized use? [*2 marks]*

15. (i)What is a workstation? [1/2 mark]

(ii)What is a server? [1/2 mark]

SECTION B

Answer question 16 (compulsory) and any other three questions from this section

16. (a) Explain the three control structures in programming [3 Marks]

(i)

(ii)

(iii)

(b)State and describe three types of error can occur in programming [3 Marks]

(i)

(ii)

(iii)

(c)(i) State **two** differences between a compiler and an interpreter [2 marks]

(ii)Give **one** advantage of compliers over interpreters [1 mark]

(iii)Give **one** advantage of interpreters over compliers [1 mark]

(d) Draw the corresponding flowchart for the pseudo code below. [4 marks]

Assign 0 to A,
Repeat adding 1 to A,
Until A is greater than or equal to 5,
Print A.

17. (a) How is peer-to-peer network different from client/server network, considering how programs, data and information are stored? [2 marks]

(b) (i) Give **three** advantages of optical fibers over twisted-pair wires and coaxial cables. [3 marks]

(ii) Suggest **two** disadvantages of optical fibers. [1 mark]

(c) (i)Compare asynchronous and synchronous transmission. [1 mark]

asynchronous	synchronous

(ii) Give one disadvantage of the c(i) above [1 mark]

asynchronous	synchronous

(d) (i)Compare the following Ring ,star and bus network topologies. [1 ½ marks]

Bus NetWork	Ring NetWork	Star Network

(ii)Give one **disadvantage** of each [1 ½ marks]

Bus NetWork	Ring NetWork	Star Network

(iii)Draw a diagram t represent the ring ,star and bus topologies [1 ½ marks]

Bus NetWork	Ring NetWork	Star Network

(e) (i) Explain the term upload [$^1/_2$ mark]

_____

_____

_____

(ii)If a 56K modem is operating at full speed, how long does it take to download a 1-MBfile? [2 marks]

18. (a).Describe the role of the systems analyst. [2 marks]

_____

_____

_____

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(b).Describe 2 techniques used by the systems analyst in requirements specification.[2 marks]

(b).In the software development process, what happens at the analysis stage? [1 Mark]

(c) Describe fully what is meant by the term *top-down design*? [3 Marks]

(d) The process of developing such software is an iterative process. What does *iterative* mean? [1 Mark]

(e)(i) What are CASE tools? [1 Mark]

(ii)What is the purpose of CASE tools? [1 Mark]

(iii) What does *CASE* stand for? [1 Mark]

(f) Identify ant two activities within the design stage of the software development process. [3 Marks]

19 (a).Describe four functions of a single user operating system. [4 Marks]

_____ (b) Explain the need for an operating system to have a command language interpreter. [1 Mark]

_____

_____

_____(c) Give 4 examples of the many processes which can be initiated by a user and which are then

carried out by the operating system. [4 Marks]

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(d) What happens if a command entered by the user is not recognized by the operating system? [1 Mark]

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_____ (e)Describe an advantage and a disadvantage to storing the operating system in RAM rather than in

ROM? [2 Marks]

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_____ (g) Describe three features that a **networkoperatingsystem** must have that a single user operating

system does not need. [3 Marks]

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20. (a) Explain two reasons why computers use the binary system? [2 Marks]

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(b)What is meant by the term *word* in the phrase *16-bit word computer*? [1 Mark]

_____

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_____

(c) What is the decimal value of the largest integer that can be represented by a byte in a computer which deals only with positive numbers? [1 Mark]

_____

_____

_____

(d)What does the acronym ASCII stand for and what is ASCII? [2 Marks]

_____

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_____

(e) Complete the following table and note that no marks will be awarded for answers with missing or unclear working. [6 Marks]

BIN	**DEC**	**HEX**
	45	
		B6
11001		

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KCSE PREDICTOR 4

COMPUTER STUDIES
PAPER 2

QUESTION ONE

a) The data below shows a spreadsheet for loan applicants from a youth fund from a certain county.

MEMBER NO	NAME	DATE OF BIRTH	DATE OF APPLICATION	GENDER	AGE	AMOUNT APPLIED
A001	ABC	1/3/1992	1/1/2016	M		Ksh 200,000.00
B001	CDE	2/6/1999	3/1/2016	F		Ksh 600,000.00
C008	FGH	5/6/1992	3/1/2016	M		Ksh 400,000.00
K001	JKL	2/7/1990	7/1/2016	F		Ksh 700,000.00
S007	MNO	2/9/1960	7/1/2016	M		Ksh 600,000.00
Z006	KRS	4/8/1992	2/2/2016	M		Ksh 500,000.00
A008	TUV	4/8/1960	3/2/2016	M		Ksh 700,000.00
B005	CED	2/6/1995	5/2/2016	F		Ksh 600,000.00
C011	HGF	5/6/1990	10/2/2016	M		Ksh 400,000.00
K012	LKJ	2/7/1970	6/1/2016	M		Ksh 700,000.00
S019	NOM	2/9/1991	4/6/2016	M		Ksh 600,000.00

Type the data as shown in the spreadsheet above name the worksheet as Original save the workbook as application. (14 Marks)

(b) Copy the worksheet named original above to another worksheet in the same workbook and name it as Evaluation.

(i) Fill the column for the (AGE) which is the difference between DATE OF APPLICATION and
DATE OF BIRTH in years to the nearest whole number. (6 Marks)

(ii) Create a validation in the DATE OF APPLICATION such that it should be after DATE OF BIRTH.
(2 Marks)

(iii) Format all columns having currency Data type to Kenya shilling. (2 Marks)

(iv) Create the columns COMMENT and AMT AWARDED.

The COMMENT is based on the following

- I f the gender is male and the age by the data of applicable is greater than 30 years the COMMENT is INELIGIBLE otherwise ELIGIBLE.

- Amount awarded if a person is eligible if 80% of the amount applied.

(v) Fill in the two columns for the AMOUNT AWARDED and COMMENT using the formula. If an applicant is INELIGIBLE the amount awarded is left blank. (10 Marks)

(c) Copy the worksheet named Evaluation above to another worksheet in the same workbook and name it as final.

(i) Filter out data in the final in the final worksheet leaving out those who have been awarded a loan. (2 Marks)

(ii) Create a table showing the total amount awarded to all Males and total awarded to Females and total for both male and females. In the sample table below fill in the values using conditional if statement . (6 Marks)

	AMOUNT(Ksh)
MALE	
FEMALE	
Total	

(iii) Draw a pie chart representing the total amount for males awarded and females warded (2 Marks)

(d) Print the following: (4 Marks)

(i) Original worksheet

(ii) Evaluate worksheet

(iii) Final worksheet

(iv) The pie chart

QUESTION TWO

The table below an extract of a manual data structure system used by a librarian of a particular school

ADMNO	S_NAME	CLASS	BOOK_NO	TITLE	BORROW TYPE	DATE_BORROWED	DATE_RETURNED
123	MIKE	1A	B001	COMPTER STUDIES BK 1	SHORT	2-1-2016	12-1-2016
456	JOHN	1B	A002	COMPREHENSIVE ENG BK 1	LONG	1-2-2016	17-1-2016
789	ADREW	1C	B003	KIE MATHEMATICS BK 1	LONG	1-3-2016	14-3-2016
987	JAMES	2A	D004	LONGHORN GEOGRAPHY BK2	SHORT	1-4-2016	8-4-2016
654	JACOB	2B	K005	KISWAHILI SHAIRI BK2	SHORT	1-5-2016	9-5-2016
321	NANCY	2C	B006	MATHEMATICS BK2	SHORT	2-3-2016	10-3-2016
879	MARY	3A	C005	HISTORY BK3	LONG	2-4-2016	17-4-2016
564	MERCY	3B	K009	FOUNDATION CHEMISTRY BK 1	LONG	2-5-2016	14-5-2016
213	PETER	3C	H001	KISWAHILI LUGHA BK 2	LONG	1-4-2016	18-4-2016
123	MIKE	1A	K005	KISWAHILI SHAIRI BK2	SHORT	1-5-2016	19-5-2016
456	JOHN	1B	B006	MATHEMATICS BK2	SHORT	1-4-2016	5-4-2016
789	ADREW	1C	C005	HISTORY BK3	SHORT	1-4-2016	7-4-2016
987	JAMES	2A	K009	FOUNDATION CHEMISTRY BK 1	LONG	1-5-2016	8-5-2016
654	JACOB	2B	H001	KISWAHILI LUGHA BK 2	LONG	1-4-2016	22-4-2016

The library charges 2 shillings per every book borrowed per day, if the book is not returned in time it attracts a penalty of 5 Shilling per day. The short loan is a maximum of seven days while the long loan is 14 days

a) From the table above create a database called library.

(i) Create THREE tables Student(ADMNO as primary key) and Book(BOOK_NO as primary key) and Borrow(Borrow_id as primary key which is auto number). (6 Marks)

(ii) Create relationship between the three tables (2 Marks)

(iii)Fill in the data in the three tables (15 Marks)

b) Create a the following queries

(i) Query named chargesqry for all charges for books on short loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,NORMAL_CHARGE,PENALTY_CHARGE ,TOTAL_CHARGE)(10 Marks)

(ii) Query named shortchargesqry for all charges for books on short loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,TOTAL_CHARGE) (2 Marks)

(iii)Query named longchargesqry for all charges for books on long loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,TOTAL_CHARGE) (2 Marks)

(iv) Create a report showing the total amount which the library has earned between any two dates on short loan save it as shortbetweendatesrpt format the currency data type to Kenya shillings (6 Marks)

(v) Create a report showing the total charged to a student for both long and short loan borrowing in one report save it as studentchrgrpt format the currency data type to Kenya shillings (4 Marks)

c) Print the following (4 Marks)

(i) All tables with data

(ii) Both query with data

(iii) Shortbetweendatesrpt

(iv) studentchrgrpt

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KCSE PREDICTOR 5

451/1
COMPUTER STUDIES
Paper 1
THEORY
2 ½ Hours

SECTION A (40 Marks)

Answer all the questions in this section

1. Differentiate between master file and transaction file. (2 mark)

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2.Give two reasons why smaller computers like laptops tend to be more expensive than desktop computers.

(2marks)

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3.List two disadvantages of using traditional file management method.

(3marks)

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4.List three sources of graphics that can be used in Microsoft word.

(3marks)

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5.Mention two things that are likely to cause eye strains.

(2marks)

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6.State two reasons why magnetic tapes are not commonly used as computer data storage medium today.

(2marks)

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8.Explain the difference between Gas Plasma Display and Liquid Crystal display Monitors. (2marks)

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9(a) Differentiate between logical and syntax errors encountered in programming.

(2marks)

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(b)What is a computational error? Give an example to illustrate.

(2marks)

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10. Anne was working on her computer studies project. She was worried of the media to use for storing her data.She settled on a media that used serial file organization.

a) How are files organized on a storage medium using this method?

(2marks)

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b) List two advantages offered by this type of file organization. (2marks)

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11. Define the following terms in relation to computer security: (4marks)

a) Data Encryption

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b) Firewall

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12. State what is meant by each of the following and give an example of where each is used.

(a) Magnetic Ink Character Recognition (MICR) (1 mark)

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(b) Optical mark reader (OMR) (1 mark)

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13. (a) Describe the term data integrity. (2 marks)

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(b) State four situations in which data may lose integrity. (2 marks)

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14. State three advantages of using robots in manufacturing of goods. (3marks)

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15. State three ways in which ICT can be used in shipping control. (3 marks)

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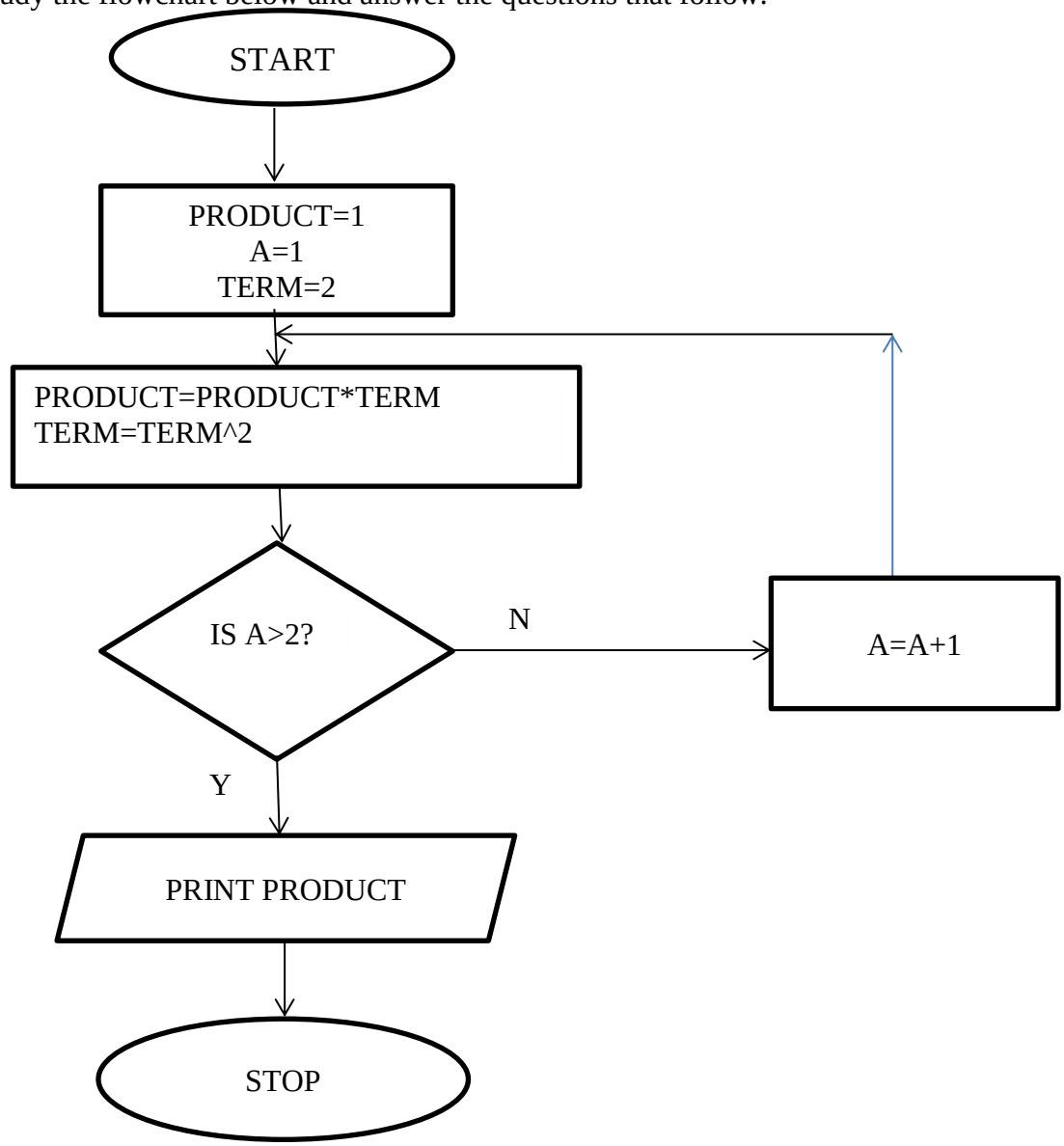
SECTION B (60 Marks)

Answer Question 16(Compulsory) and any other three questions in this section

16.(a). Study the flowchart below and answer the questions that follow.



(i) State the main type of control structure used in the flowchart. (1 mark)

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(ii). Dry run the flowchart and give the expected output. (5 marks)

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(iii) What will be the value of product when printed in the following flow chart? Show how you arrive at your answer. (5 marks)

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(b). Explain what happens when the expression A = A+1 is changed to A = A-1 (2 marks)

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c) Give two benefits of structured programming (2 marks)

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17. (a) State three reasons why it is difficult to detect and prevent computer crimes. (3marks)

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(b) State three characteristics of a suitable password. (3marks)

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(c) What is a spyware? (2marks)

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(d) A school intends to set up an e-learning system. List three problems that are likely to be encountered.

(3marks)

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(e) What is a search engine? (1mark)

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(f) Give two examples of search engine. (1mark)

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(g) Differentiate between internet and intranet. (2marks)

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18.(a) State three standard data coding schemes used in computing and electronic systems. (3marks)

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(b). Convert each of the following numbers:

i. 110.101_2 to decimal (3marks)

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ii. 12.6875_{10} to binary (3marks)

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(c). Subtract 110.01_2 from 11001.0101_2 (2marks)

(d). Using seven-bit twos compliment, perform the following binary arithmetic leaving the answer in binary notation.

1101_2 - 100101_2 (4marks)

19. (a) Give three benefits of using a **DTP software** in publishing over a **Word processor** (3 marks)

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(b). Robots are introduced in a factory which makes car engines. Mention three ways this could affect the workers.

(3 marks)

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(c). Name any two computer related courses that are offered at public universities in Kenya. (1 mark)

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(d). List two duties performed by each of the following personnel.

(i). Database administrator (2 marks)

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(ii). Computer trainer. (2 marks)

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e) Briefly describe the two types of spreadsheets (4 marks)

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20.(i) Define a system. (1mark)

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(ii) Explain system entropy. (1mark)

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(b) Describe three circumstances that can lead to development of new information system. (3marks)

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(c) Distinguish parallel changes over from straight change over as used in system implementation. (2marks)

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(d) Explain two fact finding methods used during system analysis and design. (2 marks)

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(e) Name any two types of cables used in data communication (2 marks)

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(f) State four differences between LAN and WAN (4 marks)

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KCSE PREDICTOR 5

451/2
COMPUTER STUDIES
Paper 2
PRACTICAL
2 ½ Hours

QUESTION 1

2 a) Type the following passage exactly as it appears using a word processor and save it as EXERCISE (20marks)

PROCESS OF INFORMATION SYSTEM DEVELOPMENT

INTRODUCTION TO INFORMATION SYSTEM DEVELOPMFNT

The methodology area can justly be described as a jungle. Firstly there appears to exist many hundreds of the system development methodologies. Longworth (1985) in a recent study identified over 300. If all these are different, then it is no wonder that there is so much confusion. However, it may be that the differences are trivial and are made solely to differentiate methodologies in the market place

WHA T I S A METHODOLOGY?

The term methodology is not well defined either in Literature or by practitioners.

There is very little agreement as to what it means other than at a general level. The term is usually used very loosely and yet it is used very extensively.

This loose use does not mean that there are no definitions, simply that there are no universally agreed definitions. At the general level, it is regarded as a recommended series of steps and procedures to be followed in the course and developing an information system. In a brief adhoc survey, this proves to be about the maximum that people will agree to and of course such a definition raise many more questions than it answers.

For example:

- What is the difference between a methodology and a method?
- Does a methodology include a specification of the techniques and tools which are to be used?
- Does a collection of techniques and tools constitute a methodology?
- Should the use of a methodology produce the same results each time?

The questions that arise are fundamental as well as numerous. Unfortunately the most that can be achieved is to air the issues. The information system community is in the process of debating the meaning of the term methodology in an information system context, and it may one day have a universal definition. However, it may be more realistic to assume that this will never be achieved. An information system's methodology has been defined as a recommended collection o f philosophies, phase, procedures, rules, techniques, tools, documentation, management and training for developers o f information systems.(Madison 1983). According to this definition, a methodology has a number of components.

Which specify:

- How a project is to be broken down into stages
- What tasks are to be carried out at each stage
- What outputs are to be produced
- When they are to be carried out
- What constraints are applied
- What support tools may be utilized

In addition, the methodology is supposed to specify how the project is to be managed and controlled and support the training needs of the users of the methodology. This is all encompassed in a view or philosophy concerning the important and critical aspects of information systems development.

Required:

b) Remove the underline from all the underlined and change the text to bold and italics. Apply hanging ident to the first two paragraphs. Save the document as EXERCISE 2. (6marks)

c) Select the text starting from the words "For example:…….information systems development" (at the end of the passage) and move it to a new page and save as EXERCISE 3. (5 marks)

d) (i) Retrieve **EXERCISE** document and convert it to two columns of the same width and height and justify them.
(6marks)

(ii) Double space the first paragraph of the passage and fit the entire passage into one page(4marks)

(iii) Insert your name into the passage as a footer so as to appear as © your name. Save the document as **EXERCISE 4.** (5marks)

d) Print **EXERCISE, EXERCISE 2, EXERCISE 3, EXERCISE 4** (4marks)

2. Table 1, table 2 and table 3 are extracts of records, kept in a carpentry shop. Use the information to answer the questions that follow;

Carpenter Table

CAPENTER _ID	CAPENTER NAME
CAP_001	JAMES
CAP_002	JOHN
CAP_003	ALEX
CAP_004	ISAAC
CAP_005	MAURICE

Customer Table

CUSTOMER _ID	CUSTOMER NAME
CUST_01	MARY K.
CUST_02	DIANA K.
CUST_03	ALEX N.
CUST_04	MARTHA K.
CUST_05	SARAH W.
CUST_06	JOHNSON G.

Order Table

CARPENTER _ID	CUSTOMER _ID	ORDER _NO	ITEM ORDERED	MONTH	AMOUNT
CAP_001	CUST _01	1721	Bench	January	18,000
CAP_002	CUST _02	1722	Coffee table	January	25,000
CAP_003	CUST _03	1723	Office table	January	10,000
CAP_004	CUST _04	1724	Single bed	January	18,000
CAP_005	CUST _05	1725	Arm chair	January	60,000
CAP_001	CUST _01	1726	Double bed	February	75,000

CAP_002	CUST _04	1727	Dining table	February	85,000
CAP_004	CUST _03	1728	Arm chair	February	60,000
CAP_001	CUST _02	1729	Double decker bed	February	72,000
CAP_002	CUST _06	1730	Kitchen table	February	82,000
CAP_004	CUST _02	1731	Bench	March	18,000
CAP_003	CUST _06	1732	bench	march	18,000

a) i) Using database application package, create a database file named;

CARPENTERINFORMATION

(1mk)

ii) Create three tables named Carpenter Table, Customer Table and Order Table that will be used to store the above data.

(10mks)

iii) Set the appropriate primary key for the tables

(2mks)

iv) Create relationship among the tables
(2mks)

b) i) Create a data entry form for each table and give them relevant names
(3mks)

ii) Enter the data in Carpenter Table, Customer Table and order Table respectively
(11mks)

c) i) Create a query named **individual income** to display the amount received from each customer every month.

(4mks)

ii) Create a query that computes Total income for each month. Save the query as **totalIncome**.
(6mks)

d) Create a query named loyalty to compute the total number of orders made by each customer over the three months.

(3mks)

e) Create a report to display order details, save the report as Order report

(4mks)

f) Print the three tables and the report

(4mk

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KCSE PREDICTOR 6

451/1 COMPUTER STUIES

PAPER ONE

TIME: 2½HRS

SECTION A (40 MARKS)

Answer ALL the questions in this section

1. Define the following terms (4mks)
   i) Multiplexing

   ……

   ……

   ii) Baseband signal

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2. Explain the difference between digital signal and analog signal in data communication (2mks)

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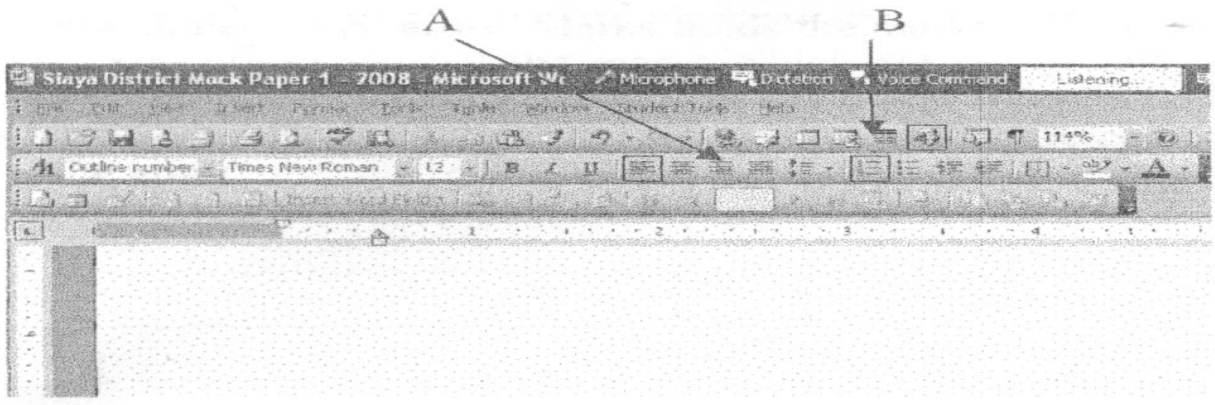
3. List down two types of computer viruses (2mks)

   ……

   ……

4. Below is a graphical representation of a section of a Microsoft words application window. Use it to answer the question that follow.



Give the uses of the icons labeled A and B (2mks)

A ……..

B ……..

5. Define the following terms as used in disk management

   i) Partitioning (2mks)

   ……

   ……..

   ii) Defragmentation (2mks)

   ……

   ……..

6. State three ways in which your school librarian can use a computer (3mks)

   ……

   ……

   ……

7. i) Write the acronym UPS in full? (1mk)

   ……

   ii) Explain the uses of UPS? (1mk)

   ……

   ……

8. a) Give two possible ways of fitting the document in one page (2mks)

   ……

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   ……

b) The shopkeeper one day switched on the computer and experienced a number of problems with windows operating system that he had installed. The problems included failure to load the operating system during the booting. After several trials of switching on the computer booting. It hand so often alongside abnormal restarting. State any two possible causes for the computer's behavior. (2mks)

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9. Differentiate between real time processing and batch processing giving examples where each could be used. (4mks)

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10. In Kenya Tea Packers Company several people are employed as record clerks., typists and messenger. The company intends to introduce a computerized system in all the departments. Suggest three reasons that would make workers unhappy with the new system. (3mks)

……

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11. Give two advantages of an electronic spreadsheet over traditional analysis ledger sheet (2mks)

……

……

12. Explain the following terms as used in information Technology with reference to software purchase:-

i) User friendliness (1mk)

……

……

ii) Authenticity (1mk)

……

……

13. While purchasing computers for his school the principal Musambweni high school decided to consult an expert. As a computer student advised him on four hard ware considerations (2mks)

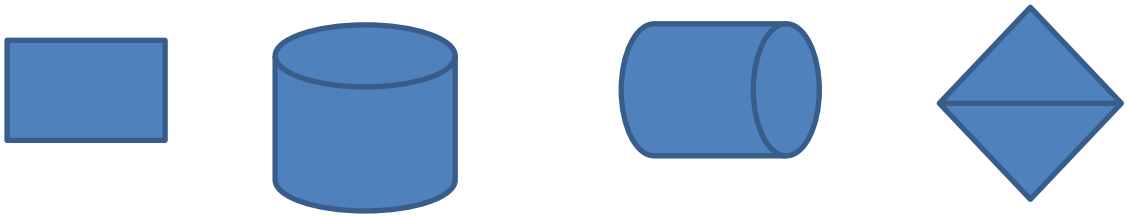
……

……

……

……

14. Give the names of the following system flowchart symbols (2mks)



A B C D

A ……

B ……

C ……

D ……

15. State any two features of a user friendly program (2mks)

……

……

SECTION B (60 MARKS)

Answer question 16 and any other three questions from this section

16. a) State three qualities of a good psecudocode? (3mks)

……

……

……

b) i) State the 3 translators used in programming (3mks)

……

……

……

ii) List two examples of;

i. Third generation languages (1mk)

……

……

ii. Object oriented languages (1mk)

……

……

c) Draw a flowchart that was used to come up with the following pseud code (7mks)

Start

N=0

X=0

While n < 3

Repeat

X = X + 1

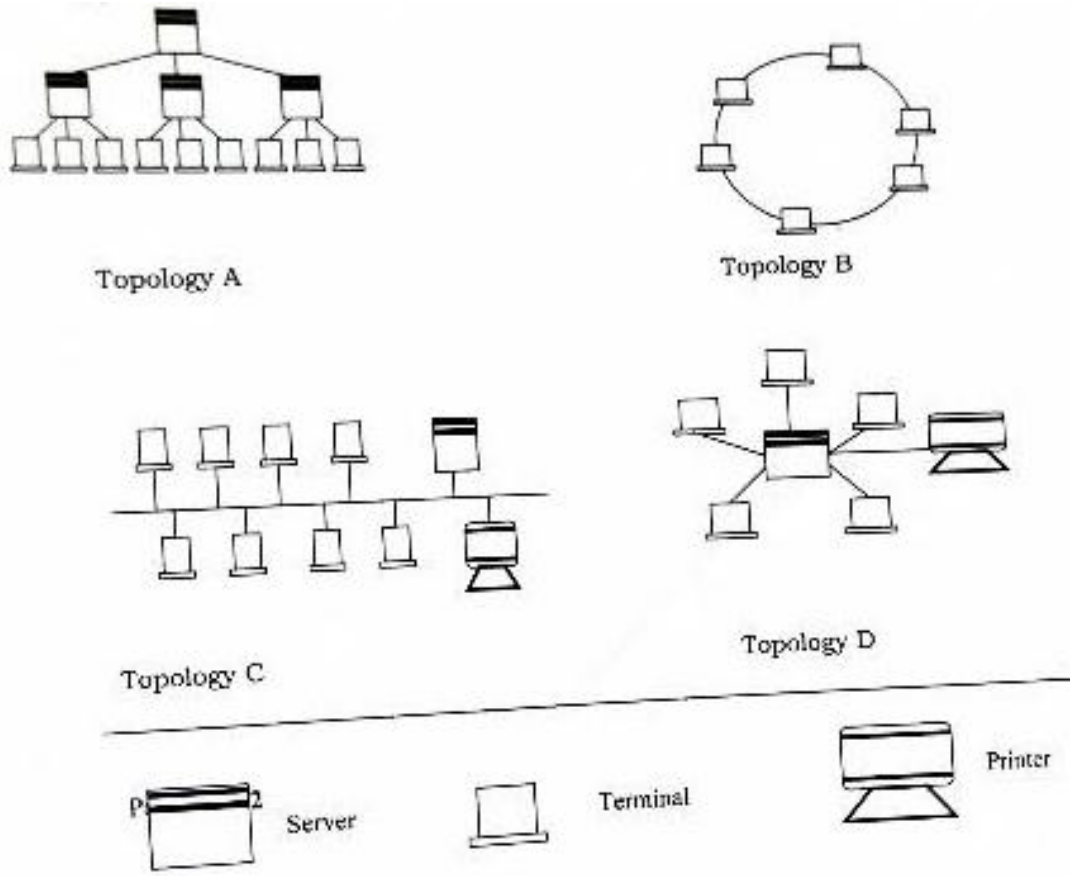
While x < 2

N = N +1

End while

Stop

17. a) The diagram below shows four common network topologies A, B, C and D.



i) Name the network topologies A, B, C and D (4mks)

A ……..

B ……

C ……..

D ……..

ii) Explain what happens if server X topology A fails (1mk)

……

……

iii) List two problems associated with network topology B (2mks)

……

……

iv) List two disadvantages associated with network topology D (2mks)

……

……

b) Differentiate between Internet and World Wide Web. (2mks)

……

……

……

c) Convert the following binary number, 11001011.001 into decimal form. (4mks)

18. a) Human activity systems are said to be soft systems. Give therereasons why they are said to be so (3mks)

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b) What are hard information systems (2mks)

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c) Discuss any five characteristics of a system (10mks)

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19. a) One of the functions of an operating system is job scheduling. Explain what is meant by job scheduling. (2mks)

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b) List and explain three types of user interfaces. (6mks)

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c) Describe the following categories of software (4mks)

i) Firmware

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……..

ii) Proprietary software

……

……

d) A new company ABC intends to go into business of desktop publishing. Advice the company on three computer hardware specification features to consider as a measure of enhancing performance. (3mks)

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……..

20. a) Briefly explain the following terms as used in spreadsheet (4mks)

i) Cell

……

ii) Range

……

iii) Value

……

iv) Function

……

b) List three paragraph formatting features of word processors (3mks)

……

……

……

c) Explain the difference between the printing of multiple pages and multiple copies (2mks)

……

……

……

……..

d) Distinguish between a worksheet and a work book (2mks)

……

……

……

e) The following is an excel worksheet showing the performance of students in Tana class.

A	**B**	**C**	**D Cat**	**E Cat**	**F**	**G**	**H**
	Adam	**Student name**	**1/50**	**2/50**	**Total / 40**	**Exam / 60**	**Total**
1	4321	DollineMbesa	30	28	(a)	45	(b)
2	4333	SelinaMbugua	20	29		55	
3	4330	Winnie Wanjema	25	26		50	
4	4322	MagaretWambari	27	24		43	
5	4324	FaniNjuguna	28	24		42	
6		Maximum	(c)				
7		Minimum	(d)				
8		Average	(e)				
9							

Using the above worksheet write the following formula to calculate the values in cells labeled (4mks)

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KCSE PREDICTOR 6

451/2

COMPUTER STUDIES

PAPER 2

PRACTICAL

QUESTION 1

21. Table 1, table 2 and table 3 are extracts of records, kept in a carpentry shop. Use the information to answer the questions that follow;

CAPENTER _ID	CAPENTER NAME
CAP_001	JAMES
CAP_002	JOHN
CAP_003	ALEX
CAP_004	ISAAC
CAP_005	MAURICE

Carpenter Table

CUSTOMER _ID	CUSTOMER NAME
CUST_01	MARY K.
CUST_02	DIANA K.
CUST_03	ALEX N.
CUST_04	MARTHA K.
CUST_05	SARAH W.
CUST_06	JOHNSON G.

Customer Table

Order Table

CARPENTER _ID	CUSTOMER _ID	ORDER _NO	ITEM ORDERED	MONTH	AMOUNT
CAP_001	CUST _01	1721	Bench	January	18,000
CAP_002	CUST _02	1722	Coffee table	January	25,000
CAP_003	CUST _03	1723	Office table	January	10,000
CAP_004	CUST _04	1724	Single bed	January	18,000
CAP_005	CUST _05	1725	Arm chair	January	60,000
CAP_001	CUST _01	1726	Double bed	February	75,000
CAP_002	CUST _04	1727	Dining table	February	85,000
CAP_004	CUST _03	1728	Arm chair	February	60,000
CAP_001	CUST _02	1729	Double decker bed	February	72,000
CAP_002	CUST _06	1730	Kitchen table	February	82,000
CAP_004	CUST _02	1731	Bench	March	18,000
CAP_003	CUST _06	1732	bench	march	18,000

g) i) Using database application package, create a database file named;
CARPENTERINFORMATION (1mk)
ii) Create three tables named **Carpenter Table, Customer Table** and **Order Table that will be used to store the above data.** (10mks)
iii) Set the primary key for the tables (2mks)
iv) Create relationship among the tables (2mks)

h) i) Create a data entry form for each table (3mks)
ii) Enter the data in **Carpenter Table, Customer Table and Order Table** respectively (11mks)

i) i) Create a query named **individual income** to display the amount received from each customer every month. (4mks)
ii) Create a database object that computers Total income for each month. Save the query as **Totalincomenomnthly.** (6mks)

j) Create a query named **loyalty** to compute the total number of orders made by each customer over the three months. (3mks)

k) Create a report to display order details, save the report as Order report (4mks)

l) Print the three tables and the report (4mks)

QUESTION 2

Use a spreadsheet to manipulate data in the table below.

Adm No	Name	Stream	Comp	Art	Bus	Eng	Mat	Student mean	Rank
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Odhiambo	H	75	78	45	65	56		
C008	Okunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

a) Enter the data in all bordered worksheet and auto fit all column. Save the workbook as **mark 1** (15mks)

b) Find the total marks for each subject (3mks)

c) Find total for each subject per stream using a function (5mks)

d) Find mean mark for each student using a function (5mks)

e) Rank mean student in descending order using the mean (5mks)

f) Create a well labeled column chart on a different sheet to show the mean mark of every student. Save the workbook as **mark 2.** (7mks)

g) Using **mark1,** use subtotals to find the average mark for each subject per stream. Save the workbook as **mark 3** (7mks)

h) Print **mark 1,mark 2** and the **chart**

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KCSE PREDICTOR 7

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
TIME: 2½ HOURS

SECTION A (40 marks)

Answer ALL the Questions in the spaces provided.

1. (a) What is a peripheral device? (2 marks)

……

……

(b) Give **two** examples of peripheral devices. (1mark)

……

……

2. State any **six** characteristics of the **fifth** generation computers. (3 marks)

……

……

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……

……

3. Explain the term hard disk crashing (2 marks)

……

……

……

4. Give **two** ways of erasing contents of a cell in a worksheet. (1marks)

……

……..……

5. List **three** control structures used in programming language. (3 marks)

……

……

……

6. Distinguish between a file and a folder as used in windows operating system. (2 marks)

……

……

……

7. While on an environmental conservation trip, students were told never to dispose off laptop batteries carelessly in landfills. Describe potential environmental hazards associated with those batteries. (2 marks)

……

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……

8. Differentiate between the Insert mode and the overtype mode as used in Microsoft word processing. (2 marks)

……

……

……

……..……

9. A signal wave has **three** salient properties; Frequency, wavelength and amplitude. Describe each one of them. (3 marks)

……

……

……

……

10. (a) Differentiate between single mode and multimode fiber optic cables. (2 marks)

……

……

……

(b) State **one** application area for each mode of fiber optic cables. (2marks)

……

……

……

11. Fig. 2.4 shows electronic pathways on a section of a motherboard. Study the Illustration and answer the question that follows.

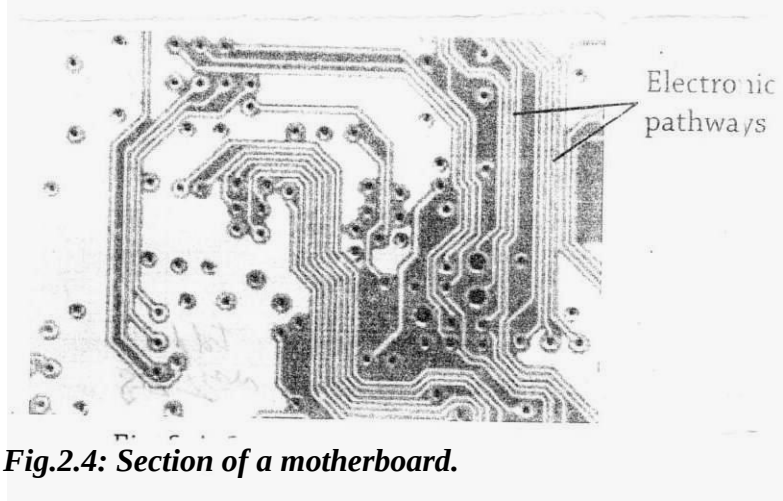

Fig.2.4: Section of a motherboard.

(a) What name is given to the pathway? (1 mark)

……

……

(b) Explain **three** types of the pathways in (a) above. (3 marks)

……

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……

12. Explain how an operating system such as Microsoft windows ensures that there is no hardware conflict. (2 marks)

……

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……

13. (a) You may have come across the term 'Garbage in Garbage out' (GIGO). Explain the meaning of this statement with regard to data processing. (2 marks)

……

……

……

(b) State **four** operations you would undertake to safeguard data integrity. (2 marks)

……

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……

14. In the text extract in Fig.4.5 below, the first character occupies more than one line.

Scientific discoveries are truly amazing. Take for example the recent discovery that the white flashes in storms are caused by gamma rays emitted when electrons and positrons combine. This is the clearest evidence yet that matter and anti-matter exist in our world!

Fig. 4.5: Text extract

(b) State the formatting feature used for the first character. (1 mark)

……

……

(c) Explain the importance of using the formatting feature in (a) above. (1 mark)

……

……

15. Differentiate between mouse pointer and insertion pointer. (2 marks)

……

……

SECTION B (60 marks)

Answer Question 16 and any other three questions from this section in the spaces provided.

16. (a) Define the term 'problem definition' (1 mark)

……

……

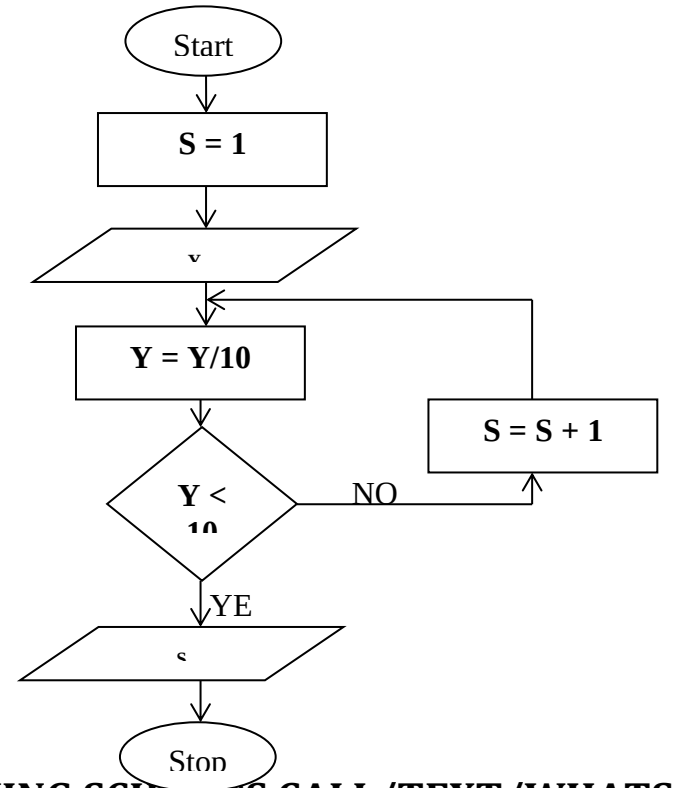
(b) In any given circumstance, there are several reasons that may motivate a programmer to identify a problem worth solving. State **three** such reasons. (3 marks)

……

……

……

(c) Study this flowchart and use it to answer the questions that follow.



(I) Give the expected output from the flowchart when the value of Y is:

(i) 48 (2 marks)

……

……

……

(ii) 9170 (2 marks)

……

……

(iii) – 800 (2 marks)

……

……

(II) Write the pseudocode that can be used to create a program represented by the above Flowchart. (5 marks)

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17. (a) The magnitude of a number can be determined using **three** parameters. Using Examples, describe the three parameters. (3 marks)

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(b) Using two's complement, show how the arithmetic below would be carried out on a 8 – bit computer system.

(+54) – (+29). (5 marks)

……

……

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(c) Using one's complement, perform the following binary arithmetic leaving the answer in decimal notation. (5 marks)

$1101_2 - 100101_2$

……

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(d) Differentiate between a word and a word length as used in data representation. (2 marks)

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18. (a) Write down the **three** letter file name extensions (e.g **sys**) that are normally associated with the following file type.

(i) A simple ASCII text file. (1 mark)

……

……

(ii) A Microsoft word document. (1 mark)

……

……

(iii) A digital photograph (1 mark)

……

……

(iv) A Microsoft power point presentation (1 mark)

……

……

(v) A bit mapped image. (1 mark)

……

……

(c) A scanner is quite a useful input device. Describe **three** useful tasks which a scanner can fulfill. (3 marks)

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(c) Describe **two** types of scanner that are used for inputting data into a computer. (4marks)

……

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……

(d) (i) Previously scanners were connected to a computer via the parallel port, but this has be replaced by USB. Briefly explain the difference between these **two** ports. (2marks)

……

……

(ii) Explain why USB has been preferred over parallel port. (1 mark)

……

……

19. (a) Differentiate between the following characteristics of a system:

(i) Hard system and Soft system. (2marks)

……

……..

(ii) Boundary and Environment. (2marks)

……

……

(iii) Open and Closed system. (2marks)

……

……..

(b) Define the following terms as used in system development.

(i) System Entropy (1 mark)

……

……..

(ii) System feedback. (1 mark)

……

……

(c) State **two** advantages and **two** disadvantages of using interview as a method of data collection.

Advantages. (2 marks)

……

……

Disadvantages. (2 marks)

……

……

(d) Under what circumstances would a questionnaire be best suited for data collection. (3 marks)

……

……

……

……

20. (a) List **two** devices used in wireless communication. (2marks)

……

……

(b) Explain the following communication devices:

(i) Hubs. (1 mark)

……

……

(ii) Modem (1 mark)

……

……

(iii) Codec (1 mark)

……

……

(iv) Bridge (1 mark)

……

……

(c) Describe the following terms with respect to data communication.

(i) Bandwidth (1 mark)

……

……

(ii) Attenuation (1 mark)

……

……

(d) Distinguish between videotex and teletext. (2marks)

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(e) (i) What is virtual reality? (1 mark)

……

……

(ii) Explain **four** uses of virtual reality. (4 marks)

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KCSE PREDICTOR 7

451 / 2
COMPUTER STUDIES
Paper 2(PRACTICAL)
2 ½ Hours

QUESTION ONE

a) Using the information below, design an appropriate spreadsheet and enter the following data Give the table an appropriate Title. Save as ***D: ACTIVITY 1***

(12mks)

Khadija scored 89 in English. 76 in Biology, 56 in *Computer*, 90 in Kiswahili and 48 in Math's. **Peter** scored 78 in English, 89 in Biology, 67 in *Computer*, 90 in Kiswahili and 34 in Math's. **Jane** scored 70 in English, 93 in Biology, 34 in *Computer*, 23 in Kiswahili and 69 in Math's. **Tasneem** scored 72 in English, 36 in Biology, 79 in *Computer*, 85 in Kiswahili and 56 in Math's **Rashid** scored 90 in English, 98 in biology, 89 in *Computer*, 100 in Kiswahili and 35 in Math's.

(b) Calculate the total marks for each student Label it appropriately. Write on the paper provided the formula used for Tasneem.

(6mks)

(c) Calculate the average for English, Biology, *Computer*, Kiswahili and Math's and Total score for the class.

Label this average appropriately and write on the paper provided the formula for obtaining these average marks for *Computer*. Save as D:' ***Activity 2***

(8mks)

(d) Arrange the records in a descending order by total score.

(4mks)

(e) Count all students whose total score is above 60% and place your result in an empty cell. Label the result appropriately Write on the paper provided the formula used. Save as ***D: Activity 3.***

(6mks)

(f) The school would like the remark PASS for students whose total score is 50% and above and FAIL

otherwise. Generate an appropriate cell. Label the row/column as REMARK, Write down the formula

used for Peter. Save as ***D: Activity 4.***

(6mks)

(g) Plot a bar graph for the following averages. English, Biology, *Computer*, Kiswahili and Math's Add a title

and label the *X* and Y axes appropriately. Save your graph as ***D: Activity G. (6 Marks)***

h) Print *Activity*1, *Activity* 3, *Activity* 4 and *Activity* G.

(2mks)

QUESTION TWO

(a) Create a database file named *D:*HOTELS to store the following data. Make the passport Id unique

record identifier (the primary key)

(20marks)

NAMES	**PASSPORT**	**AGE**	**MALE**	**HOTEL**	**HOTEL CHARGE**	**DATE OF VISIT**
Bank Moon	UN017/98	42	YES	SERENA	$3'000.00	3.02.98
Barbara Bush	US009/98	58	NO	INTER-CONTINENTAL	$6,000.00	2.12.98
Hilary Clinton	USO15	38	NO	*WINDSAR*	$7,000.00	1.02.98
Nana Anan	UNO16/98	42	NO	*HILTON*	$8,000.00	1.10.98
Akata Mary	UG013/98	68	YES	*HILTON*	$4,500.00	1.02.98
Jakaya Kikwete	TZ001/98	68	YES	*HILTON*	$6,300.00	1.05.98
Desmond Tutu	SA007/98	79	YES	*WINDSAR*	$7,000.00	3.04.98
Mashell Graca	MG011/98	51	NO	INTER-CONTINETAL	$10,000.00	3.05.98
Kennedy Njoroge	KE001/98	45	YES	*LAICO*	$6,000.00	1.06.98
Margaret Thatcher	GB010/98	72	NO	SERENA	$9,200.00	1.02.98
Museveni Kaguta	UG00/98	52	YES	*WINDSAR*	$8,000.00	1.11.98
Jalal Talabani	IQ005/98	64	YES	*LAICO*	$3,200.00	3.05.98
Al Bashir	LB006/98	48	YES	*WINDSAR*	$11,000.00	3.12.98
Salva Kilr	SD014/98	50	YES	*HILTON*	$8,000.00	1.12.98
Jacob Zuma	SA012/98	67	YES	SERENA	$11,000.00	2.11.98

b)

ii) Sort the table in ascending order of age.

iii) Save the table as D Hotels 2 ***(3 Marks)***

c) Insert a field that will accommodate the continents of their origin. Note that passport ID UNO 17/98, UN016 98, USOI5/98, US009/98 are from America. UG013/98, TZ001/98, SA007/98, MQ011/98, KE001/98, UG003/98, LB006/98, SDOI4/98, SDO14/98 AND SAO 12/98 from Africa 1Q005/98 Asia and GB010/98 Europe. Save as *D:* Hotels 3

(6marks)

d) i) Create a query that contains the field passport ID, Names, Date of Visit, Hotel Charge and age for all members who visited Kenya hotels after 2/12/98 and are above 60 years of age or their Hotel charge paid is less than $ 7,000.00 Write down the query expression used. Save as ***D: QueryH***

(6 Marks)

ii. Create a total query that will give total hotel charges .Save as ***D:QueryT***

(4marks)

e)

i) Excluding the male field, create a report and give it a title " President Visit"

(6marks)

ii) Save the report as ***D: Report P***

(2Marks)

iii)Print Hotels, Hotels *2,* Hotels 3, Query H, Query T, Report P

(3mks)

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KCSE PREDICTOR 8

451/1

COMPUTER STUDIES

PAPER 1

(THEORY)

TIME: 2 1/2 HOURS

SECTION A; (40 MARKS)

Answer all the questions in the spaces provided

1. Anthony, a student at Kericho Technical College defined a computer as "an electronic device which accepts, processes data and produce information depending on its decisions". Was this student right? Explain you answer. (1Mrk)

_____

_____

2. Output from the computer can normally be in several forms. Give the difference between Soft copy and Hard copy. (2mks)

_____

_____

_____

3. Define the term program documentation. (2mks)

_____

_____

4 . State any **two** types of documentation created in system development. (2mks)

_____

_____

5. What is data security? (1mk)

_____

_____

6. Explain any **two** ways in which computers have been made user-friendly for persons that are physically challenged. (4mks)

_____

_____

_____

_____

7. Explain the meaning of the following terms as used in computer data transmission. (3Mks)

(a) Simplex transmission

_____

_____

(b) Half duplex transmission

_____

_____

(c) Full duplex transmission

_____

_____

8. What are the **four** major parts of a Database System? (4 Mks)

_____

_____

_____

_____

9. Give the difference between machine language and assembly language. (2Mks)

_____

_____

_____

_____

10. Define the term robot. (1Mrk)

_____

_____

11. Differentiate between a drive and a device driver. (2Mks)

_____

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_____

12. a. Differentiate between an electronic spreadsheet and the traditional analysis sheet

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_____

_____(2mks)

b. Explain how you would change the name of a worksheet in Microsoft Excel. (3Mks)

_____

_____

_____

13. State **three** reasons why it is important observe safety precautions and practices in a computer laboratory. (3mks)

_____

_____

_____

14. a. List two examples of Desktop Publishing Software. (1mrk)

_____

_____

b. Differentiate between Save and Save As as used in most windows applications. (2mks)

_____

_____

_____

_____

15. Define the following internet related terms. (5 Marks)

(a) Internet Protocol

_____

_____

(b) Search engine

_____

_____

(c) Browser

(d) E-learning

(e) Uniform Resource Locator

SECTION B: (60 MARKS)

Answer question 16 and any other three questions

16. a. Define the term control structure. (2mks)

b. Study the following pseudocode and answer the questions that follow.

```
Start
    N = 0
    X = 0
    While N < 3
        Repeat
            X = X + 1
        Until X = 2
        N = N + 1
    End while
Stop
```

i. Determine the value of N and X. (5mks)

ii. Draw a flowchart of the above pseudocde. (8mks)

17. (a) State any **three** reasons why people may resist the introduction of computers at their place of work. `` (3mks)

(b) State **two** operational methods of an organizational ensuring the security of data. (2mks)

(c) Explain the components of an expert system. (6mks)

d. Explain the role of feed back in a system. (2mks)

e. List **two** theories of system development. (2mks)

18 .a Briefly explain the following terms as used in spreadsheet (4mks)

(i) Cell

(ii) Range

(iii) Value

(iv) Function

b. List **three** paragraph formatting features of word processors. (3mks)

c. Explain the difference between the printing of multiple pages and multiple copies. (2mks)

_____
_____
_____
_____

d. Distinguish between a worksheet and a work book (2mk)

_____
_____
_____
_____

e. Explain **four** examples of action query. (4mks)

_____
_____
_____
_____
_____
_____

19. a. Explain any **three** benefits of using ATMs in banking industry. (6mks)

_____
_____
_____
_____
_____
_____

b. Explain **two** advantages of advertising on web instead of using an advertising brochure.

_____
_____
_____
_____
_____
_____(4mks)

c. Mention any **three** ways of ensuring efficient back up of data. (3mks)

_____
_____
_____
_____d. Give any **two** benefit of hacking to an organization's computer system. (2mks)

_____
_____

20. a. Perform the following binary arithmetic.

i. $1011101_2 + 100100_2 - 1111101_2$ (4mks)

ii. $5\,{}^{6}/_{8} - 8{}^{2}/_{5}$ using ones complement. (4mks)

b. Differentiate between data validation and data verification. (2mks)

_____
_____
_____
_____

c. List **three** factors that determine the methods of data access in a computer. (3mks)

_____
_____
_____
_____

d. Give any **two** characteristics of mater file. (2mks)

_____
_____

KCSE PREDICTOR 8

451/2
COMPUTER STUDIES
Paper 2
(PRACTICAL)
2 ½ hours

1. (a) Create a folder named **Harper**. Type the document below exactly as it appears using a word processing package and save it as MOCKING_BIRD in the folder created. (8mks)

TO KILL A MOCKINGBIRD

To Kill a Mockingbird is primarily a novel about growing up under extraordinary circumstances in the 1930s in the Soutern United States. In *To Kill a Mockingbird*, author Harper Lee uses memorable characters to explore civil rights and rasism in the segregated Southern United States of the 1930s.

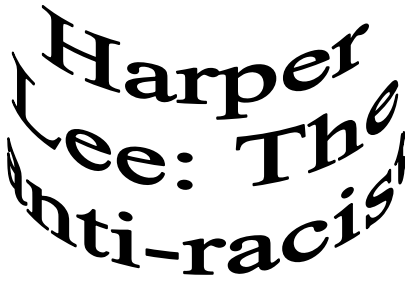
Told through the eyes of Scout Finch, you learn about her father Atticus Finch, an attorney who hopelessly strives to prove the innocence of a black man unjustly accused of rape; and about Boo Radley, a mysterious neighbor who saves Scout and her brother Jem from being killed.

The Three Most Important Aspects Of To Kill A Mockingbird:

The title of To Kill a Mockingbird refers to the local belief, introduced early in the novel and referred to again later, that it is a sin to kill a mockingbird. Harper Lee implies that it's unjust and immoral.

The events of To Kill a Mockingbird take place while Scout Finch, the novel's narrator, is a young child. But the sophisticated vocabulary and sentence structure of the story indicate that Scout tells the story many years after the events described, when she has grown to adulthood.

To Kill a Mockingbird is unusual because it is both an examination of racism and a bildungsroman. Lee examines a very serious social problem. Lee seamlessly blends these two very different kinds of stories.



(b) Save a copy of the document created above as "MOCKING_BIRD 2" in the folder created in (a) above and use to answer parts (c) to (e).
(1mrk)

(c) (i) Insert a drop cap to the first letter of the first paragraph, dropping it by two lines.
(2mks)

(ii) Apply bullets to the paragraphs under the second heading.
(3mks)

(iii) Change the first paragraph under the first heading to three columns.
(3mks)

(iv) Format the heading "***TO KILL A MOCKINGBIRD***" as follows:
(4mks)

- **Alignment**: Right
- **Font type**: Arial black
- **Font size**: 18
- **Font style**: Underline

(v) Proofread the document to correct spelling mistakes
(1mrk)

(vi) Set the page to A4 size, with the following margin specifications:
(3mks)

- **Top:** 0.63"
- **Bottom:** 0.6"
- **Left:** 0.6"
- **Right:** 0.63"

(vii) Set the line spacing of the last two paragraphs starting with "To Kill a Mockingbird is unusual..." to 2.0.
(2mks)

(viii) Insert a header bearing your name and admission number.
(2mks)

(ix) Move the 1st paragraph under the second heading to come below the drawing.
(2mks)

(x) Set a hanging indent to the 2nd paragraph which starts with "To Kill a Mockingbird is unusual…"

(2mks)

(xi) Replace all words written "racism" with "racial discrimination"

(2mks)

(xii) Set the 1st paragraph which starts with "*To Kill a Mockingbird* is primarily a…" so as the text is aligned to the right.

(1mk)

(e) Automatically paginate the document using the format **"page x of y"**

(1mk)

(f) Apply a page border to the whole document with the following formats:

(3mks)

- **Style**: Double line
- **Border color**: Blue
- **Border width**: 2¼pt

(g) (i) Create a table at the end of the document created in (b) above and enter the following data

(3mks)

BOOK _NO	BOOK_TITTLE	AUTHOR	PRICE
B0-02	In Cold Blood	Truman capote	875.00
B0-09	Roman Holiday	Gregory Peck	955.00
B0-03	The catcher in the Rye	J. D. Salinger	650.00

(ii) Insert the title "RELATED BOOK NOVELS" as the first row of the table. Align the title to the center

(2mks)

(iii) Apply borders to the whole table

(1mk)

(iv) Using a formula, calculate the average cost of books in the table.

(2mks)

(h) Print the documents; MOCKING_BIRD and MOCKING_BIRD 2

(2mks)

2. The tables below, **STUDENT, SUPERVISOR** and **SUPERVISIONS** are extracts of records kept in MOKASA UNIVERSIRY for project supervisions.

Student Number	Name	Gender	Project Fee Paid
C001	Ken	M	32000
C002	Joy	F	27800
C003	Lero	M	18900
C004	Moth	F	42700
C005	Ben	M	45000

Table 1 STUDENTS TABLE

Supervisor Number	Name	Department
L220	Alex	Mechanical
L230	Sakaja	ICT
L240	Roy	Electronics
L250	Mati	Education
L260	Joy	Human Resource

Table 2 SUPERVISOR S' TABLE

Supervision Number	Supervision Date	Student Number	Supervisor Number	Project Title
100	12/03/2015	C001	L220	Java
200	22/03/2015	C003	L230	Website
300	17/03/2015	C004	L240	Robotics
400	02/03/2015	C001	L220	Java
500	18/03/2015	C002	L240	Robotics
600	12/03/2015	C004	L230	Java
700	11/03/2015	C002	L250	Database
800	12/03/2015	C003	L220	Java
900	12/04/2015	C005	L250	Database
1100	12/04/2015	C002	L250	Database

Table 3 SUPERVISIONS TABLE

a) Using a database application software, create a database file named **PROJECT**
(1mk)

b) Create three tables named **STUDENT, SUPERVISOR** and **SUPERVISIONS** as shown above.
(9mks)

c) Set the primary key for each table.
(3mks)

d) Create relationships among the tables.
(2mks)

e) Enter the data in the table **STUDENT, SUPERVISOR** and **SUPERVISIONS** as shown above.
(9mks)

f) Create a form for each table above.
(3mks)

g) Create a query named **BALANCE** to display student name, Gender, project fee balance per student, given that the total project fee is **Ksh.50000**.
(4mks)

h) Create a query named **BALANCE2** to display students' Names, project title whose fee balance is above **Ksh.20000.** .
(4mks)

i) Create a bar chart based on question (h) to display students Name and balance. Save as **BALANCE CHART.**
(3mks)

j) Create a report named SUPERVISION to display Students Names, Project Title, names of supervisor, and supervision Dates. The records in the report should be grouped by students' Name and the number of supervisions by each student should be displayed.
(5mks)

k) Title the report as supervision per lecturer.
(2mks)

l) Print the following:

- **Tables**: STUDENT, SUPERVISOR and SUPERVISIONS
  (2mks)
- **Queries**: BALANCE and BALANCE2
  (2mks)
- **REPORT**: SUPERVISIONS
  (1mk)

mwalimuepublishers@gmail.com

KCSE PREDICTOR 9

451/1
Computer Studies
Paper 1
(THEORY)
2 ½ Hours

SECTION A (40 Marks)

*Answer **all** questions in this section*

1. Give **TWO** reasons why Powder type fire extinguishers are not recommended to be used in a computer laboratory. (2 Marks)

   ……
   ……
   ……
   ……

2. State the purpose of each of the following memories in a computer system. (2 marks)
   (i) ROM

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   ……
   ……
   ……

   (ii) RAM

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   ……
   ……
   ……

3. State two factors that one would consider when selecting data entry method in computing. (2 Marks)

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   ……
   ……
   ……
   ……
   ……
   ……

4. Describe the following types of printers and state one application area of each.(3Marks)
   (a) Dot matrix

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(b) Thermal printer.

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5. Differentiate between in-house software and freeware. (2 Marks)

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6. Give two importance of feedback mechanism in systems (2 Marks)

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7. With an aid of a diagram, explain one-to-one database relationship. (2 Marks)

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8. KASSU Secondary School intends to set up internet connection in their school for e-learning purposes. Advise the school management on four internet connectivity requirements that is required for them to be able to access internet. (2 Marks)

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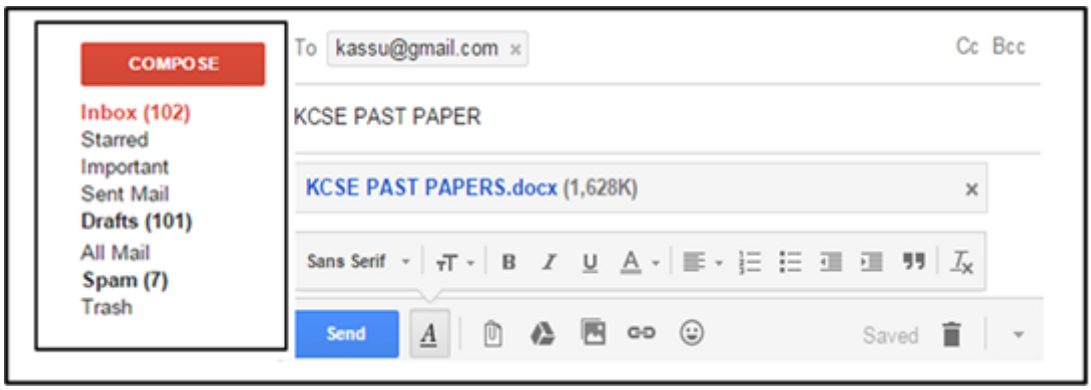
9. The figure below shows an extract of an e-mail application.



What is meant by each of the following terms: (3 Marks)

(a) Trash

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(b) Spam

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(c) Inbox

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10. State two ways in which users in an organization can be a security threat to data in an information system. (2 Marks)

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11. State three negative impact of information communication technology on the Environment. (3 Marks)

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12. In a computer based information system, state the purpose of the following files and give **one** example where such a file may be required in a school. (4 marks)

a. Report file.

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b. Sort file.

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……

13. State three responsibility of a Database administrator in an organization. (3 Marks)

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14. With an example for each, describe how computers are used in the following areas of education; (3 Marks)

a. Simulation

……
……
……
……

b. Tutorial

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……
……

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……

15. a. Dan a computer student noticed that every time a person enters the computer lab the computer screen flickers. Identify three reasons why the monitor might be flickering (3 Marks)

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b. State two ways in which the problem can be solved (2 Marks)

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SECTION B (60 Marks)

*Answer **question 16** and any other **three** questions*

16. a. State two advantages and two disadvantages of high level programming language (2 Marks)

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b. State three situations when REPEAT .. UNTIL structure can be used in writing a program (3 Marks)

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c. The roots of the equation $\mathbf{ax^2 + bx + c = 0}$ are given by the formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

i. Write a pseudocode for the above program (5 Marks)

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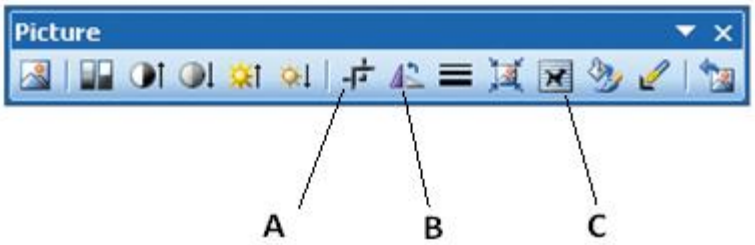
ii. Draw a flow chart for the above pseudocode (5 Marks)

17. (a) (i) The figure below shows a picture tool bar



Name and state the functions of the features marked A, B and C:

(i) A (1 Mark)

……..
……
……..……

(ii) B (1 Mark)

……..
……
……..……
(iii) C (1 Mark)

……..
……
……..……..
(b) State the importance of Column breaks as used in word processor. (1 Mark)
……..……
……
……..……..……
……

(c) Change case is where a user applies so that the text can have some contrast in size. Write the word Digital SIGNAL (2 Marks)

(i) Title case

……..……..…

(ii) Toggle case

……..……..…

(d) Define the following terms as used in charts. (2 Marks)

(i) Legend

…..……..……
……
……

(ii) Data range

……
……
……

(e) The table below shows how a kiosk owner uses a spread sheet to keep records in a shop.

	A	B	C	D	E	F
1	**ITEM NAME**	**NUMBER OF ITEMS**	**UNIT COST**	**TOTAL BUYING PRICE**	**TOTAL SELLING PRICE**	**PROFIT**
2	Blue band	*150*	*120*			*3600*
3	Toss	*135*	*50*			*1350*
4	Cow boy	*120*	*120*			*2880*
5	Panga soap	*118*	*50*			*1180*

(I) Write a **function** to calculate the total buying price. (2 Marks)

……

……

(II) Write a **formula** to calculate the Profit. (2 Marks)

……

……

(III) The total buying prices of all items was increased by 12% and the value 12% is placed in cell B6. Using cell addresses with absolute referencing, write a formula to calculate the Total Selling Price in cell E2. (2 Marks)

……

……

(IV) State the output of the expression =SUMIF(F2:F5,"<1 500")would return.(1 Mark)

……

……

18. a. Describe the term prefixing an extra sign bit as used in data representation. (2 Marks)

……

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……

……

b. Convert each of the following numbers system.

(i) 0.78125_{10} to binary (2 Marks)

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……

……

(ii) $3A9_{16}$ to Octal (2 Marks)

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c. Perform the following binary operation. (3 Marks)

1010.11+111.10-101.11

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d. Using one's complement, perform the following binary arithmetic leaving the answer decimal notation. $17_{10} - 45_{10}$ (6 Marks)

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19. a. Distinguish between the following terms as used in data communication (6 Marks)

i. Guided transmission medium and unguided transmission media

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ii. Multiplexing and demultiplexing

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……

iii. Logical and physical Topology

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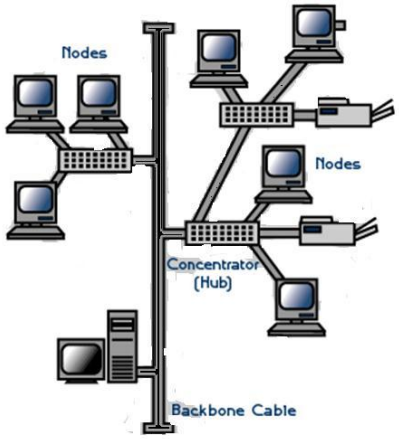
b. Below is a diagram of a network topology.



i. Name the above topology (1 Mark)

……
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ii. State two advantages and two disadvantages of using the topology named above (4 Marks)

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c. List and explain the two data transmission techniques (4 Marks)

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20. a. Distinguish between a computer drive and computer driver (2 Marks)

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b. State any four factors to consider when selecting an operating system (4 Marks)

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c. Explain any four factors that dictates how the operating system organizes data in a computer (4 Marks)

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d. Define the term file in relation to the operating system (1 Mark)

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e. The operating system stores details of a file for easy identification and retrieval of files. Explain any four file details the operating system uses to search and identify a file (4 Marks)

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f. Distinguish between a menu driven operating system and graphical user interface operating system (2 Marks)

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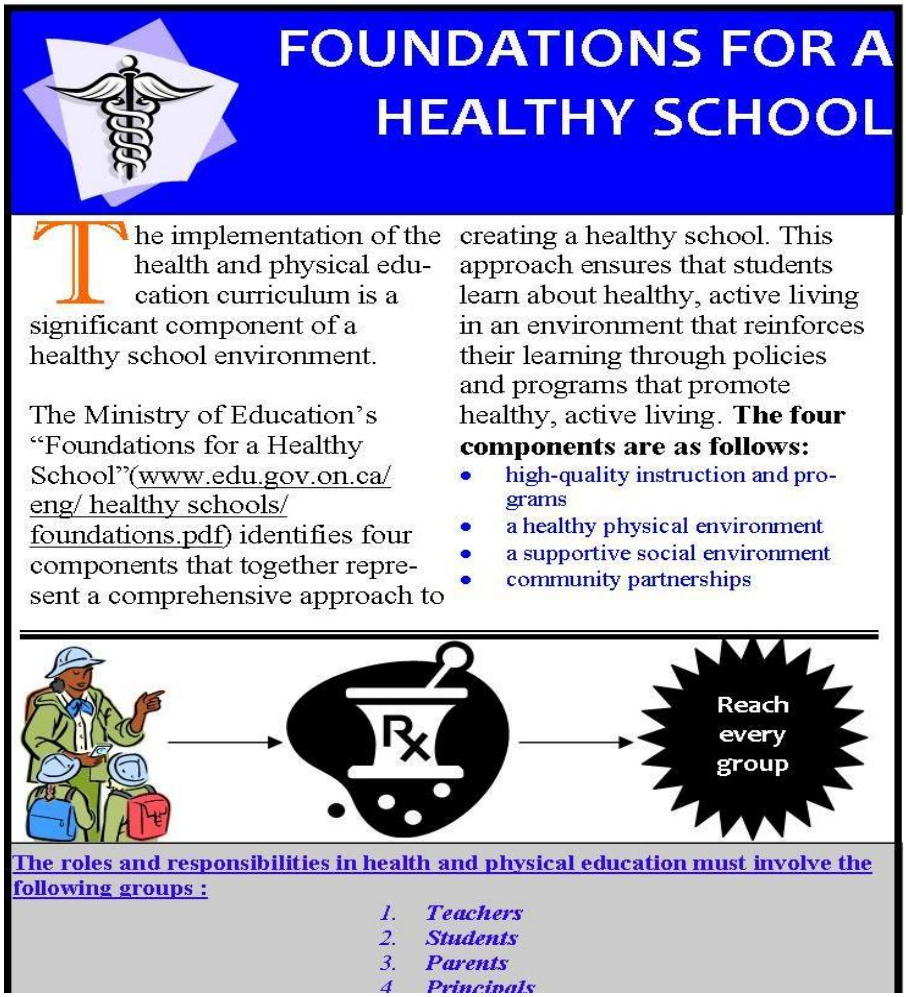
KCSE PREDICTOR 9

451/2
COMPUTER STUDIES
Paper 2
(PRACTICAL)
Time 2 ½ HOURS

Question 1

(a) Using Desktop Publishing application program, design the following publication. Name the file as HEALTHY_SCHOOL (19mks)

(b) Prepare the page layout out as follows:



(i) Custom paper size: Width = 11.6", Height = 8.268 (2mks)

(ii) Set the margins to 0.787" all round (2mks)

(iii) Divide the page into TWO equal horizontal parts using a ruler guide. (2mks)

(iv) The border of the design should start from the set margins

(2mks)

NB: After designing one part of the divided page, TWO copies of the publication should fit into one page in landscape as set up above.

(c) Create a logo as shown to measure **height** 1.213" and **width** 1.118"

(3mks)

(d) (i) The main title text (near the logo) should be of **Candara, Font size 26, Bold and Right aligned**

(4mks)

(ii) Set-up the rectangular object with the main heading to a background color of **Accent 1**

(1mk)

(e) The text on the lower part of the publication should to be formatted as follows:

(3mks)

- Color: **Custom color combination (Red=51, Green=4, blue=252)**
- Alignment: **Left**
- Font: **Size 10**

(f) Format all other text to **times new roman font type** and **font size 12**

(2mks)

(g) Apply a style to the line below the text in columns and a thickness of 4.5" in weight

(1mk)

(h) Enforce hyphenations to the text in columns

(1mk)

(i) The star object with text "Reach every group" should be a 24-point star. Format the text inside to font type **calibri** (2mks)

(j) Make the designs to fit one page

(1mk)

(k) Group all objects in the two designs as one.

(2mks)

(l) Insert a footer using your name index number, aligned to the center

(2mks)

(m) Print the publication.

(1mk)

Question 2

The information in the table below was obtained from the books of Safiri Transport Company.

CAR	MODEL	REGNo	YEAR OF MANUFACTURE	DRIVER	IDNO	EMPLOYMENTNo	TRIP MAD
TOYOTA	PICKUP	KAG 725 H	1996	JOHN	122834	DI1223	5
ISUZU	SALOON	KCB 725 D	2010	MARY	153458	DI9853	3
MAZDA	S/SAGON	KBC 763 L	2006	BETTY	986732	DO4587	15
IVECO	TRUCK	KAG 625 H	1987	KYLE	985443	DO6592	20
TATA	TRUCK	KZG 725	2011	PETER	758849	DI4010	25
JAC	TRUCK	KAA 740 H	1992	JERRY	985873	DO9203	40
NISSAN	S/WAGON	KAG 552 M	1990	PAUL	857330	DO8345	2
MAZDA	SALOON	KCB 678 J	2010	SETH	764943	DI9352	15
MITSUBISHI	TRUCK	KCC 345 F	2006	KATE	934472	DI8754	2
TOYOTA	S/WAGON	KCA 892 U	1987	CALEB	109456	DI6557	1
TOYOTA	S/WAGON	KAP 544 R	2011	TIM	678842	DO7395	1
ISUZU	S/WAGON	KAP 711 R	1992	PATRICK	764484	DO5764	7
BENZ	SALOON	KBN 877 C	1991	BRIAN	769973	DI2343	3

a. Using a database management application split the information in the above table into two tables namely vehicle and drivers respectively and save the database as Safiri Transport Company
(15 Marks)

b. Create a relationship between the two tables
(2 Marks)

c. Create an appropriate form that would be used to enter new records in the driver's table and save it as form driver (7 Marks)

d. Create a query that will display a list of all the drivers who made more than 5 trips to kericho, include all the necessary details. Save it as kericho.
(5 Marks)

e. Create a query with a calculated field named total allowance to display the total allowance earned by each driver, include all the necessary details. Save it as allowance
(5 Marks)

f. Using both tables, create a query that would be used to complete each driver's earnings and save it as pay roll.
(3marks)

g. Using the payroll query in (f) design a report for Safari Transport Company that would used to calculate total allowance and monthly pay for each driver, assuming that each driver works for 25 days in a month. (7marks)

h. Print vehicle, driver, form driver, kericho, allowance and payroll
(6 Marks)

KCSE PREDICTOR 10

451/1
COMPUTER STUDIES
PAPER 1
(Theory)
TIME:2 1/2 HOURS

SECTION A (40 AMRKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

1. (A) What is an embedded computer? (l mk)

……

……

(B) State the main component that formed the basis for second generation computers. (1 mk)

……

……

2. The diagram below shows electronic pathways on a Section of a motherboard. Study the Illustration and answer the question that follows.

(a) What name is given to the pathway? (1 mark)

……

……

b) Explain three types of the pathways in (a) above. (3 marks)

……

……

……

……

3 (A) Explain how an operating system such as Microsoft windows ensures that there is no hardware conflict. (2 marks)

……

……

……4

Explain how the operating system controls the following resources (3marks)

i) Processor

……

ii) Main memory

……

iii) Input and output devices

……

(C') Give one function of a main frame operating system hich you ould not expect to flnd in the operating system of a micro—computer.

(Iiiik)

: çL

t.

5 (A) Define the term firewall (1mk)

……

……

B) State three ways of ensuring efficient backup of data (2Marks)

……

……

……

6. A) Outline the three program control structures (1½Marks)

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……

……

B.) Give three types of selection construct (l½Marks)

……

……

……

……

C.) Define the term encapsulation as applied in object oriented programming (2Marks)

……

……

……

7. A) What is Hypertext Mark Up Language? (l Mark)

……

……

B.) Why should a program be documented in each and every stage? (1mark)

……

……

8. A) A student was reading through a daily newspaper on different types of data communication media. As a computer student, how will you assist him define the term data communication media? (1 Mark)

……

……

B) Differentiate between share level security and user level security as used in network security. (2mks)

……

……

……

(C) What are the differences between Token ring topology and Ethernet (2mks)

……

……

……

9. Describe the term biometric analysis (1Mark)

……

……

10. Give two uses of spreadsheets in a government office concerned with carrying out national census (2mks)

……

……

……

11 . (A) You may have come across the term Garbage in Garbage out' (GIGO). Explain the meaning of this statement with regard to data processing. (2 marks)

……

……

……

(B) Name four examples of application software. (2mks)

……

……

……

……

(C) What is the difference between Real data type and an Integer data type as used in programming? (2mks)

……

……

……

(D) Differentiate between a source code and an object code. (2mks)

……

……

……

12. State three changeover strategies that can be used to move from the old system to a new one. (3mks)

……

……

……

……

13. Name four data types used in spreadsheets. (2 Marks)

……

……

……

……

14. What is a chart wizard in spreadsheets? (1 Mark)

……

……

15. (a) What is a peripheral device? (1mks)

……

……

SECTION B (60MKS)

ANSWER QUESTIONS 16 (COMPULSORY AND ANY OTHER 3 QUESTIONS IN THIS SECTION)

16. (a) Design a flowchart for a simple program that can he used to categorize people according to age. if the person is abo\e or equal 18 years. output "Adu1t otherwise output Young (8mks)

(b) What is the difference between looping and selection. (2mk)

……

……

……

(c) Name the stage of program development cycle when:

(i) A user guide would be written (5mks)

……

(ii) A programmer dry-run the code

……

(iii) System charts would be drawn

……

(iv) Staff training is done

……

(v) Acceptance of problem existence

……

7. The information below is maintained by the patron of wildlife club in a school. Study it and answer the questions that follow.

Name Class Admission number Membership number Group

Name	Class	Admission number	Membership number	Group
Aruya	4E	3740	S00l	Serengeti
Mercy	3E	3802	T00l	Tsavo
Ominde	2N	3949	T003	Tsavo
Caro	4W	3762	M00l	Mara
Miriam	3N	3800	A00I	Amboseli
Zach	2E	3925	S002	Serengeti
Antony	2W	3926	N00l	Nairobi

Januaris	4N	3946	AB001	Aberdare
Pauline	3E	3805	T002	Tsavo
Mary	1W	4029	N002	Nairobi
Daniel	IN	4013	M002	Mara

a) Describe the field values records and file (3 marks)

……

……

……

……

b) State the most appropriate data type for the fields

i) Admission number (1mark)

……

……

ii) Membership number (1 mark)

……

……

c) State most appropriate primary key for the list (1mark)

……

……

d) If a database was to be created for the list forms, Tables, queries and reports are likely to be used

i) State the purpose of each of the objects (4 marks)

……

……

……

……

……

……

ii) Which objects cannot be used to store date in the list (3 marks)

……

……

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……

……

e) i) How many field values are in the list (1 mark)

……

……

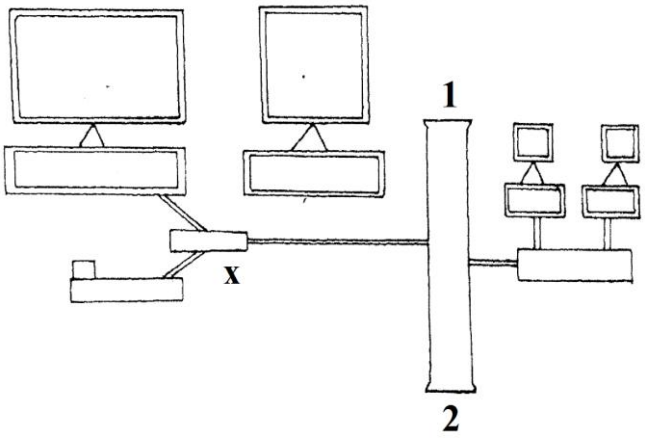
ii) How many records are in the list (1 mark)

……

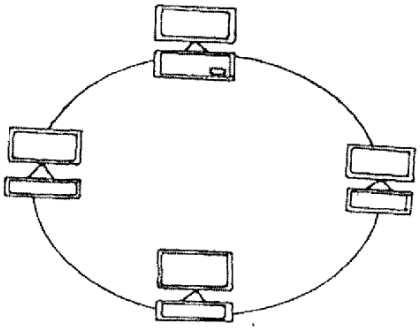
……

18. (a) Consider the topologies demonstrated in the diagram below.

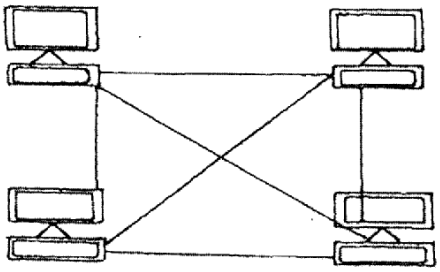
A.



B.



C.



(i) Identify the network topologies (3marks)

A……

B……

C……

(ii) In topology A, identify the network device that should be at the end point I and 2 (1mark)

……

……

(iii) Which of the above topologies is likely to be used in a wide area network? (1mark)

……

……

……

(iv) Highlight three disadvantages of topology B. (3 marks)

……

……

……

(v) Identify the device labeled X in topology A (l mark)

……

……

(b) State two main classes of network software (2marks)

……

……

……

(c) Briefly describe the following as used in networking (4marks)

i) Repeaters

……

……

ii) Network hub

……

……

iii) Fibre Optic cables

……

……

iv) Network interface card (NIC)

……

……

9. a) Compute the value of x in the following expressions

(i) $24.35_{10} = X_2$ (3mks)

(ii) $6AB_H = X_{10}$ (2mks)

(b) Using twos complements compute the following using 8 bits binary (4mks)

25_{10} - 20_{10}

c) Subtract the following binary numbers using the One's Compliment method. (3mks)

$(11101)_2 - (1010)_2$

d) Convert 6057_8 to Hexadecimal. (3mks)

20. a) i) Define a system. (1mk)

……

……

ii) Explain system entropy. (1 mk)

……

……

b) State three circumstances that can lead to development of information systems. (3 mks)

……

……

……

……

c) Distinguish parallel changes over from straight change over as used in system implementation. (2 mks)

……

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……

d) Discuss two fact finding methods. (4 mks)

……

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……

……

e) Differentiate an open system from a closed system. (2 mks)

……

……

……

f) List two responsibilities of a system analyst. (2 mks)

……

……

……

KCSE PREDICTOR 10

451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
TIME : 2½ HOURS

1. Modern Technology Electronics LTD wants to computerize her operations in order to enhance her service delivery. All clients' data will be held in a database called **MODERNBASE**.
   Required:
   (a) In **MODERNBASE** database, create two related tables namely: **CLIENTS** and **PRODUCTS** using the details given below. (10mks)
   Client
   -Client ID
   -Company Name
   -Location
   -Postal Address
   -Telephone
   Product
   -Category ID
   -Product Description
   -Unit Price
   -Quantity
   (b) Make the client ID and category ID the primary keys in the two respective tables. (4mks)
   (c) The company wants to keep track of each item ordered by each client.
   Create a relationship between each client and product tables and reinforce the referential integrity. (4mks)
   (d) Create columnar forms for each of the tables. Save the form as **Client Entry** and **Product Entry.** (10mks)
   ` (e) Mary Atieno ordered for the items shown in the product ordered table. Use the Client Entry and Product Entry forms to enter the following records. (8mks)
   Client Table

Client ID	Client Name	Postal Address	Location	Phone
MTE001	Emmanuel Nguya	540	Kiambu	200878
MTE007	Mary Atieno	4080	Migori	245350
MTE009	Jimmy Wasike	54	Kakamega	567049
MTE016	Simon Muoki	3400	Embu	459900
MTE023	Susan Cherono	460	Eldoret	690650

Product Table

Category ID	Product Description	Unit Price	Quantity
TV001	21" LG TV	16000	8
DV003	Sony DVD Player	4500	20

TV004	14" JVC TV	11000	22
RD003	Samsung Radio Player	4700	8
TV007	14" ZEC TV	8200	4

(f) Create a query that displays the Client ID, Client Name, Location, Product, Description, Quantity, Unit Price and a calculated field **Amount** being the product of Quantity and Unit price. Save the Query as Item Query. (8mks)

(g) Generate a report based on **Hem Query**. Save the report as **Sales Report**. (2mks)

(h) **Print**

(i) Two tables in design view: Client and Product.

(ii) Two forms in form view

(iii) Hems Query

(iv) Sales Report. (4mks)

2. TumainiTechrocrats Electronics LTD deals with sales of three types of electronic goods namely: Television sets, Radio system and DVD players.
Below is a table showing details of April 2007 sales.

Modern Technocrats Electronic LTD.							
Sales as per 30th April 2007							
CATEGORY CODE	Type	Item Description	Unit Price	Sold	Sub total	Tax	Net amount
TV001	TV	21" LG TV	16000	8			
TV003	TV	38" Samsung TV	60000	2			
RD001	Radio	JVC 3CD charger	21000	12			
DV001	Radio	Philips DVD player	5500	6			
TV004	TV	14" JVC TV	11000	22			
DV002	Radio	LD D20VD player	6200	18			
TV005	TV	21" Sony TV	15800	14			
DV003	DVD	Sony DVD player	4500	20			
RD002	Radio	Panasonic Radio player	3200	30			
RD003	Radio	Samsung Radio player	4700	8			
TV007	TV	14" ZEC TV	8200	4			
DV001	Radio	Panasomic DVD player	6500	16			

Tax rates	TV	15%			
	DVD	12%			
	RADIO	8%			

Required:

(a) Enter the data in a work sheet and save it as **A:\MODERNTEC** (18mks)

(b) Format the worksheet as follows:

(i) Centre the title across columns. (2mks)

(ii) The text should be Aerial, 18 points, Bold and Centred within a box. (2mks)

(iii) Column headings to be wrapped within the cells and centred horizontally and vertically. (2mks)

(iv) The unit price to be in ***two decimal*** places and currency prefix ***Ksh***. (4mks)

(c) Use the appropriate cell references to calculate

(i) The subtotal, rounded to two decimal places.

(ii) The TAX is based on the type of item.
Use the rates given in the table above to calculate tax payable on each item sold. (2mks)

(iii) The net amount, which is the subtotal less tax. (2mks)

(d) Sort the worksheet in ascending order according to category. (2mks)

(e) Calculate the subtotals and grand totals for the three types of electronic goods. (6mks)

(f) On a separate sheet, create a bar graph that compares sales for the three types of electronic goods. Label it appropriately. (8mks)

(g) Print the worksheet showing all formulae used instead of values and the graph. (2mks)

KCSE PREDICTOR 11

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
TIME: 2 ½ hours

SECTION A (40 MARKS)
Answer all the questions in this section

1. Name types of registers and explain the purposes for each type of register (5marks)

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……

2. State the factors you will consider when selecting an input device (3marks)

……

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……

3. Define the following terms:- (4marks)

i) Assembler

……

ii) Compiler

……

iii) Interpreter

……

iv) Source program

……

v) Object program

……

vi) Algorithm

……

vii) Flow chart

……

viii) Pseudo code

……

4. What merits does time sharing data processing method offer (2marks)

……

……

5. Commercially produced packages have disadvantages as compared to user made packages. State the disadvantages (3marks)

……

……

……

……

6. Write the following acrimonious in full as used in computer studies (2marks)

i) WYSWYG

……

ii) RMM- with reference to memory –

……

iii) EBCDIC –

……

iv) OS –

.....

7. Explain the types of error that are likely to exist in a program (4marks)

……

……

……

……

8. A firm which wants to undertake programming of its tasks has approached as a software engineer to advice on what to look for in the high level language to use. Outline the factors it should observe in its choosing task (4marks)

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……

9. What advantages do double memory have for a user who opts for them (2marks)

……

……

10. Name the volatile main memory in the computer and state its use (2marks)

……

……

11. State advantages that an electronic spreadsheet has over traditional spreadsheets (4marks)

……

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……

……

12. Differentiate between the value parameter and actual parameter (3marks)

……

……

……

……

13. Briefly state the different between a multi programming environment and a multi processing environment (2marks)

……

……

SECTION B

Answer question 14 and any other three questions in this section

14. In any given triangle ABC, the tangent of an angle A given the three sides of the triangle as a,b and can be obtained by the formular.

$$\text{Tan } 1/2\ A = \sqrt{\frac{(s-a)(s-c)}{s(s-a)}}$$

With aid of program development tool write the code that will calculate tan ¼ A. (15marks)

15. (a) Computers are being made use of in the education sector. Explain how they are being made use of. (8marks).

……

……

……

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……

(b) The medical industry is experiencing a lot of break through by use of IT. Discuss the use of computers in medical. (4marks)

……

……

……

……

(c) Computing technology has many application areas of out life. Foe each of the following three areas give examples of how the application of this technology has improved the work being done. (3marks).

i) Banking

……

ii) Communication

……

iii) Retail systems

……

16. Write brief notes on

i) Structured programming (4marks)

……

……

……

……

ii) telecommuting

……

……

……

iii) Asynchronous mode of data transmission on a line (3marks)

……

……

……

iv) Computer crimes and abuse (5marks)

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……

17. (a) Define the following terms

i) Database (1½ marks)

……

ii) Database management system (½ mark)

……

iii) Hierarchical database (1mark)

……

iv) Relational database (1mark)

……

v) Network database (1marks)

……

(b) List the advantages of using an electronic database system for storage of data over the file approach.

……

……

……

……

(c) Study the spreadsheet below and answer the questions that follow

	A	B	C	D
1	WESTERN COMPBOOK CENTRE SALES			
2	BOOK TITLE	PRICE PER BOOK	BOOKS SOLD	
3	DBASE IV	400.00	145	
4	LOTUS FOR DUMMIES	460.00	15	
5	OFFICE WORD IN 3 DAYS	300.00	65	
6	LEARN C++ IN 3 DAYS	700.00	100	
7	TEACH YOURSELF PASCAL	700.00	200	
8	COMPUTER STUDIE	500.00	300	
9	THE CLEVER FOOL COMPUTER	300.00	10	
10				

(i) Write down the formula that can be used to find the price of the most costly book. (1mark)

……

……

……

(ii) Write down the formular that can be used to determine the total sales for the book titled' COMPUTER STUDIES. (1mark)

……

……

……

(iii)Write down the formular that can be used to determine the average price of the book. (1mark)

……

……

(iv)Write down the formula in a cell D6 that can be used to find the new price per book if they went up by a percentage written in cell B10 and the formula has to be entered only in cell D3 the be copied to others (1mark)

……

……

(v) Write down the output in D7 if in B6 is 10% (1mark)

……

……

(d) State any four advantages of using electronic spreadsheet as compared to a traditional worksheet (2marks)

……

……

18. a) Differentiate between a smart terminal and an intelligent terminal (2marks)

……

……

b) List file organization methods (2marks)

……

……

c) Name and explain three level of programming languages (4½ marks)

……

……

……

……

d) What are the characteristics of a user friendly program (3marks)

……

……

……

……

e) What is the work of a system analyst (2½ marks)

……

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……

f) Name data types support by a spreadsheet and give four examples of spreadsheet software (3marks)

……

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19. a) Explain what systems software is (5marks)

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b) Explain the factors that make it necessary to have operating systems in the today computers (5marks)

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c) Name and briefly explain user interfaces (5marks)

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KCSE PREDICTOR 11

451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
TIME: 2½ HOURS

Answer question one (Compulsory)

1. (a) Type the following table and save as LIST. DOC in the diskette provided: adjust your font type to Times New Romans, font size 12. Use the auto sum feature to get the sum in the fees column.

Name	Box Number	Town	Form	House	Fees
Wanjala Naswa	132	Namalala	2W	CHUI	8575
Abdalla Ali	100	Bamburi	3R	NDOVU	9250
Mulwa Norr	50	Matuu	1W	SIMBA	11500
Mwangi Mama	500	Kairuthi	4R	CHUI	10500
Kiptoo John	100	Tindinyo	2R	NDOVU	8575
					(20 marks)

(b) Using the third row entries in the tables provided in (a) above, type the following letter. Include all the formatting features in the letter. Justify the first paragraph of the letter. Save as LETTER.DOC in the diskette provided.

Kula Mawe High School,
P.O Box 1000,
Kula Mawe.

30th November 1998.

……
P.O BOX ……
……..

Dear …….

RE: ADMISSION

We are pleased to offer you a place in this school in form …….your house will be ……The amount of fees required is kshs. …… The school opens on 5th January, 1999.

You are required to bring the following items:

Beddings	Stationery
1. 1 mattress	1. Text books
2. 2 blankets	2. Exercise books
3. 2 bed sheets	3. 1 mathematical set
4. 1 bedcover	4. 1 ruler
5. 2 pillow cases	5. 1 Bible / Koran

Yours faithfully,

Henry Mkubwa
(PRINCIPAL) (30marks)

(c) Print both **LIST.DOC** and **LETTER.DOC.**

Answer either question 2 or 3

KOROGOCHO ACADEMY
FORM THREE END YEAR EXAM MARKS

STUDENT NAME	ENGLISH	KISWAHILI	MATHEMATICS	HISTORY
Ayuku Aseka	70	60	40	50
Irungu Wambua	50	70	60	40
Khalifa Mudigo	80	40	50	60
Nosieta Soita	30	75	60	50
Onyango Otieno	40	55	70	60

2. (a)
   (i) Create a worksheet with the following entries:
   (ii) Adjust column width where necessary to display all entries in detail. Validate the cells to accept ONLY numerals between 0 -100 and return a comment "**please enter a n**umber **between 0 and 100**" whenever an out of range error occurs. Save the worksheet as MARKS1. (11 marks)
   (b) Obtain the following:
   i) Total score for each student
   ii) Mean score for each student
   iii) Highest score per subject
   iv) Standard deviation per subject
   v) Rank for each student
   The grade for each student based on the following information.

MEAN	GRADE
75 – 100	A
70 – 74	A-
65 -69	B+
60 – 64	B
55 – 59	B-
50 – 54	C+
45 -49	C
40 - 44	C-

   On the paper provided write the formula for each activity above.
   Save your worksheet as MARKS 2. (22marks)
(c) Insert a new row for Chege Kisilu between Ayuku Aseka and Irungu Wambua. Enter his scores as 60. 50, 80 and 20. Save your worksheet as MARKS 3. (3marks)
(d) Format the ranges with values for mean score and standard deviation to display results to 3 decimal places. Save your worksheet as MARKS 4. (4marks).
(e) Select a free cell and enter 10%. Use the value entered to increment the mean score of each student. Save your worksheet as MARKS 5. (10 marks)
(f) Print MARKS 2, MARKS 3, MARKS 4 and MARKS 5.

3. **Database**

A Jua Kali Association in Nairobi created a database file for their members. In addition to entering a members' numbers and names, each record contained a date of registration of each member, membership fees paid and title of the activity.

a) Create a database file structure called JUADAT1 using the information given in table 1. The field names should match those of the data provided. Choose an appropriate primary key. Save the table as JKALI. (15 marks)

b) Append the data in table 1 on the structure created in (a) above (10marks)

c) Sort the records in JKALI on the fields you have defined for **activity** and **name** in ascending order. Save the table as JKALI2. (4Marks)

d) Create a report of the records in JKALI. The report should contain the following fields: Names, date of registration, and title of the activity. The report should sum up all the fees paid. The page title of the report is "JUA KALI REGISTRATION". Save the report as JUAREPORT. (15Marks).

KCSE PREDICTOR 12

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
TIME: 2 ½ HOURS.

SECTION A (40 Marks)

1. Name four mouse clicking techniques. (2marks)

i) ……

ii) ……

iii) ……

iv) ……

2. a) List three factors to consider when deciding on the choice of an electronic data processing method. (3marks)

i) ……

ii) ……

iii) ……

b) Identify three types of computer files. (3marks)

i) ……

ii) ……

iii) ……

3. What is mail merging as used in word processing. (1mark)

……

……

……

4. Name three parts of a task bar and state their role. (3marks)

i) ……

ii) ……

iii) ……

5. Differentiate between insert mode and type over mode. (2marks)

……

……

……

6. a) What is program documentation? (1mark)

……

……

……

b) Name two types of documentation. (2marks)

i) ……

ii) ……

7. State the purpose of the following field properties as used in database. (3marks)
a) Field size

……

……

……

b) Indexed

……

……

……

c) Default value.

……

……

……

8. What is computational error? Give an example. (2marks)

……

……

……

9. a) What is the meaning of the term online processing. (1marks)

……

……

……

b) Name two applications of online processing. (1mark)

i) ……

ii) ……

c) In which situation would online processing be referred over real time processing? (1mark)

……

……

……

10. Identify three types of computer bus. (3marks)

i) ……

ii) ……

iii) ……

11. Distinguish between downloading and uploading. (2marks)

……

……

……

12. Name three functions of database management software. (3marks)

i) ……

ii) ……

iii) ……

13. a) Define line spacing as used in ms- word? (1mark)

……

……

……

b) Identify any two types of line spacing in ms-word (1mark)

i) ……

ii) ……

14. Write the following acronyms in full. (3marks)

i) WYSIWYG

……

……

ii) BCD

……

……

iii) CMOS

……

……

15. a) Name two advantages of using a laptop over desktop. (1mark)

i) ……

ii) ……

b) State two types of system units. (1mark)

i) ……

ii) ……

SECTION B (60 MARKS)

*Answer question **16** (compulsory) and any other **three** questions from this section in the space provided.*

16. Mungano Wote Society (MWS) pays 5% interest on shares exceeding 100,000 shillings and 3% on shares that do not meet this target. However no interest is paid on deposit in the member's MWS bank account.

a) Write a pseudo code that prompts the user for shares and deposit of a particular member, calculate the interest and saving and displays the output on the screen. (6marks)

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b) Draw a flowchart to implement the above pseudo code. (4marks)

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……

c) Name four examples of Third generation languages. (2marks)

i) ……

ii) ……

iii) ……

iv) ……

d) Define the following terms as used in programming

i) Source code (1mark)

……

ii) Language translator (1mark)

……

iii) Programming (1mark)

……

17. a) What does the term information system mean. (2marks)

……

……

b) Outline any three roles of a system analyst (3marks)

i) ……

ii) ……

iii) ……

c) Describe the following types of feasibility study

i) Schedule (2marks)

……

……

ii) Economic (2marks)

……

……

iii) Operational (2marks)

……

……

d) Explain any two types of changeover (4marks)

i)

……

……

……

ii)

……

……

……

18. Define the term formatting as used in word processing (1mark)

……

……

b) State and explain any three types of formatting features giving examples. (6marks)

i) ……

ii) ……

iii) ……

c) Explain three problems which may be encountered during printing (6marks)

i) ……

ii) ……

iii) ……

d) Give four types of search options in word processing. (2marks)

i) ……

ii) ……

iii) ……

iv)……

19. Explain the three types of operating system using a block diagram (10marks)

b) What does the term hardware mean? (1 mark)

……

……

……

c) State four categories of hardware (2 marks)

i) ……

ii) ……

iii) ……

iv) ……

d) Mention two purpose of portioning a disk. (2 marks)

i) ……

ii) ……

20. a) State two reasons for using binary number system in computer. (2 marks)

i) ……

ii) ……

b) One of the coding schemes used in computing is binary coded decimal, name other two (1mark)

i) ……

ii) ……

c) Using two complements compute 20_{10} - 25_{10} using 8 bits (4marks)

d) Compute value of X in the following expression

i) $10101100.1110_2=X_{16}$ (4marks)

ii) $CAB_{16}=X_2$ (2marks)

iii) $2010_{16}=x_8$ (2marks)

KCSE PREDICTOR 12

451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
TIME: 2½ HOURS

1. a) Type and format the following document as it appears using a Word processor. Save it as TELE1 (40marks)

TELE AND VIDEO CONFERENCING

The advent of the information and communications technology has brought with it several advantages that need to be made use of by both the public and private sector. Not only are those technologies convenient but some are also cost effective.

Even though most of the communications technologies are currently widely in use -Mobile telephones and internet -one area that needs seriously to be explored and utilized by both government institutions and private sector is tele and video conferencing.

Government and private sector need to take advantage of the facilities offered by tele and video conferencing

During the February 1 launch of the ' Just Like Home' seamless network by the region's three main mobile phone providers, Safaricom, MTN Uganda and Vodacom Tanzania, the celebration were held in the three Different countries at different times of the same day.

Nothing wrong with that only that the chief Executive of the three firms were meant to be present at all the functions. I say 'Were meant to' because I only attended the Nairobi launch.

After the Kenya launch, held at Nairobi's Serena hotel over breakfast from 7am, the three CEO's, (Safaricom's Bob Collymore, MTN's Noel Meier and Vodacom Tanzania's Romeo Kumalo) were to proceed to the other two launches. These were first the Tanzania launch at lunch time and finally, the Uganda dinner launch in kampala

Imagine all the travelling involved and the resultant fatigue for the three firms, Plus others who were part of the retinue.

Even though one would.

Argue that the travelling to all three countries Was necessary as there were pape5rs to be signed, Reliable sources tell me that a formal exercise. Everything else, including the paper work and Memoranda of cunderstanding had already been signed.

The second instance when holding a video conferencing would have been more ideal was recently when Ethiopia's premier Meles Zenawi made a few hours visit to Nairobi to discuss the Somalia crisis with the former president Kibaki.

b) Insert the following formula which is used to compute the percentage growth of a particular mobile phone provider in a region

(4marks)

$$V(x) \leq \left[K + \sum_{j=1}^{n} cue^{-Auj} + V(x+u) \right]$$

c) The following table shows the percentage growth of the three mobile phone providers in two periods of six months in the year 2011,2012 and 2013. Include it exactly as it is formatted in the passage just below the formula. Create a formula to calculate the total percentage growth over the three years for each period.

(5marks)

Years	Safaricom		MTN		Vodacom	
	Period 1	Period2	Period 1	Period 2	Period 1	Period 2
2011	10	7	12	6	5	8
2012	20	9	20	3	28	67
2013	10	9	7	39	17	1
TOTALS						

d) Print **TELE1.**

(1marks)

2. a) i) Create a Worksheet with the following entries and save the workbook as **NOMA**.

(12marks)

OMBAHEKIMA ACADEMY				
FORM THREE END EXAM MARKS				
STUDENT NAME	ENGLISH	KISWAHILI	MATHEMATICS	HISTORY
Ayuku Aseka	70	60	40	50
Irungu Wambua	50	70	60	40
Khalifa Mudigo	80	40	50	60
Nosieta Soita	30	75	60	50
Onyango Otieno	40	55	70	60

ii) Adjust column width where necessary to display all entries in details. Validate the cells to accept ONLY numerals between 0-100 and return a comment **"please enter a number between 0 and 100"** Whenever an out of range error occurs.
(3marks

iii) Rename sheet 1 as MARKS1.
(2marks

b) Obtain the following:

i) Total score for each student
(2marks)

ii) Mean score for each student
(2marks)

iii) Highest score per subject
(2marks)

iv) Standard deviation per subject
(2marks)

v) Rank for each student
(3marks)

vi) Grade the students using the grade for each student based on the following information.
(4marks)

MEAN	
GRADE	
75-100	A
60-74	B
50-65	C
35-49	D
0-34	E

b) Copy contents of Sheet 1 to sheet 2 and rename it as MARKS2.
(2marks)

c) Insert a new row for Chege Kisilu between Ayuku Aseka and Irungu Wambua. Enter his scores as 60, 50, 80, and 20.
(3marks)

d) Copy contents of sheet 1 to sheet2 and rename it as MARKS3. Format the ranges with value for mean score and standard deviation to display results to 3 decimal places.
(4marks)

e) Generate a graph to compare Mathematics performance and save it in a new sheet as MATHSG.5marks

F) Print MARKS 1, MARKS2, MARKS3 and MATHSG.
(4marks)