PAST PAPERS
COMPUTER STUDIES
PAPER 1
(THEORY)
OCT/NOV 1998

SECTION A (40 MKS)
Answer all the questions in this section in spaces provided.

1.   Using a program flowchart explain the "WHILE…DO" interaction construction.
                                                                                      (3mks)
2.   Explain two uses of an uninterruptible power supply unit   (2mks)

3.   Explain the meaning of BACKUP   (2mks)

4.   Define an operating system   (2mks)

5.   State two advantages of electronic spreadsheets over manual worksheets.   (2mks)

6.   State two roles of a system analyst   (2mks)

7.   Define a primary key field   (3mks)
8.   State three functions of a database management system   (3mks)
9   a)   Define local area network
     b)   State any two components of a local area network   (2mks)

10. a)   State two types of computer output devices   (2mks)

     b)   State a situation where real time processing would be appropriate. (1mk)

11. State three functions of the central processing Unit (CPU)   (3mks)

12. a)   Explain the difference between system software and application programs.
                                                                                      (2mks)
     b)   Explain the difference between digital and analogue computers.   (2mks)
13. a)   Explain the difference Random Access Memory and Read Only Memory
                                                                                      (2mks)
     b)   State in which memory the monitor program would be stored.   (1mk)
14. State the two requirements of computer program testing   (2mks)

15. For each of the following file organization methods, state an appropriate storage
     medium.
              a)   Serial

              b)   Random   (2 mks)

SECTION B (60 MARKS)

Answer question 16 and any other three questions

16. Students sat for a test in computer studies. The table below gives the marks obtained and the number of students obtaining the marks.

Write a program in a structured high-level language to calculate the mean of the result. The formula for the mean is given in the table below.

(15mks)

Marks obtained (x)	Number of students (f)
10	1
15	2
20	6
25	5
30	10
35	6
40	4
45	2
50	1
55	1

Formula for the mean:

$$\text{Mean} = \frac{\sum fx}{\sum f}$$

17. a) Briefly explain the following terms:
   i. cell
   ii. range
   iii. label
   iv. value
   v. Function

b) A spreadsheet has the following entries

	A	B	C	D	E	F	G
1	PROJECTED BUDGET						
2	Percent	10.0%					
3							
4	ITEM	1996	1997	1998			
5	Food	56,000					
6	Clothes	24,000					
7	Fees	50,000					
8	Transport	20,000					
9.	Entertainment	15,000					
10							
11							

Provide a formula for cell C5 that can be copied onto cell D5 and the range C6…D10 to give a uniform increase of 10% of the previous year's value for each item. (3mks)

c) State **two** advantages of word processors over manual typewriters (2mks)

d) List **three** formatting features of word processor (3mks)

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

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

b) Explain the difference between data privacy and data security. (4mks)

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

d) Explain the use of computers in health care (6mks)

19. a) i) Define normalization (2mks)

ii) State three objectives of normalization (3mks)
b) What is a distributed system? (3mks)

c) State any f**our** criteria for choosing an operating system (4mks)

20. a) Match the computer generation with the technology used to make the Processor

Generation	Technology
Third	Thermionic values
First	Integrated circuits
Fourth	Transistor
Second	Large scale integration

(4mks)

b) Draw a block diagram showing the function units of computer hardware. Name the units.

(6mks)

c) i) List **three** types of secondary storage media (3mks)

ii) State **one** advantage and one disadvantage of a laser printer (2mks)

PAPER 1
OCT. /NOV. 1999
2 ½ HOURS

Instruction to Candidate
This paper consist of Two sections; A and B
Answer all the questions in section A
Answer question 16 and any other Three questions from section B
All answer should be written in the spaces provided on the question paper.

SECTION A (40 MARKS)
Answer all questions in this section
1.   State any three functions of a computer   (3mks)
2.   Give two types of storage devices used in a computer giving an example of each.
                                                                                    (4 mks)
3.   Give any three precautionary measures considered to ensure the safety of
        computers in a computer laboratory   (3mks)
4.   Define
        a)   File

        b)   Record

        c)   Field
5.   List two features of word processor   (2mks)
6.   Differentiate between the hardware and software components of a computer
        giving an example of each   (4mks)
7.   What is program documentation? Give two examples of program documentations
                                                                                    (3mks)
8.   Give two differences between high-level and low-level languages. (2mks)

9.   Worksheet cells are referenced using the column letter and row number e.g. D2 is
        cell in column D and row 2.
        Use the sample worksheet provided to answer the questions below.

	A	B	C	D	E	F
1	Moth	Jan.	Feb	Mar.	April	Total
2	Fees	460	460	460	460	
3.	Food	300	350-	305	270	
4.	Electricity	100	100	100	100	
5.	Fuel	150	150	150	150	
6	Transport	38	270	150	300	
7	Total					

a)   Write down the data type that is stored in cells C5   (1mk)

b)   What cell contains the data items representing transport for the month of
        February?   (1 mk)

c)   Write down the formula that may be used to compute the total in cell F6.   (1mk)

10.   Name any two types of graphs that are supported by spreadsheets   (2mks)

11.   What is a relationship database?   (2mks)

12.   As regards to communication within a computer network, what do you understand
        by the following terms: (2mks)
        i)   Point –to-point
        ii)   Broadcast
13.   Give any two types of data entries that may be input into a worksheet cell
                                                                                (2mks)
14.   Give any two function of a system analyst.   (2mks)
15.   List any three program control structures used in programming   (3mks)

SECTION B (60 MKS)
ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS

16. The roots of the equation $ax^2 + bx + c = 0$ are given by the formula

$X = \dfrac{-b \pm \sqrt{b + 4ac}}{2a}$ And $a \neq 0$

  a) Draw a flow-chart to compute the roots of the equation.   (10mks)

  b) Using the flow-chart write a program that will compute the roots and if $b^2 - 4ac$ is negative, the program should display the message "NEGATIVE"
  (5mks)

17. A multinational organization has offered to donate computers to your school. The Board of Governors has requested you advise on the operating system to be used by providing answers the following questions.
  a) What is an operating system?   (1mk)
  b) State and briefly explain any two types of operating systems   (6mks)

  c) Briefly explain any four functions of an operating system.   (8mks)

18. a) i)   State one area where computer are used.   (2mk)

     ii)   Give any two advantages of using computers in this area   (4mks)

  b) Explain the effect of computers technology in the following areas:
     i)   Job opportunities
     ii)   Job Skills
     iii)   Communication   (9mks)

19. A computer vendor has recommended the use of a computer database to your school for student information
  a) Explain to the Board of Governors what a database is and its functions
  (5mks)
  b) Give two examples of database systems   (2mks)

  c) Briefly explain any two advantages and two disadvantages of using a Database   (8mks)
20. a) what is a computer network topology?   (2mks)

  b) Using appropriate diagrams, show any three computer network topologies
  (9mks)

  c) Briefly explain two reasons why organizations need to network their computers.   (4mks)

COMPUTER STUDIES
(THEORY)
PAPER 1
OCT./NOV. 2000

SECTION A (40 MARKS)
ANSWER ALL THE QUESTION IN THIS SECTION

1.   Write the following abbreviations in full.   (3mks)
      i)   BCD

      ii)   ASCII

      iii)   EBDIC

2.   Define the term array as used in computer programming   (2mks)

3.   Suggest how computers may in future be made more users friendly for persons
      that are
              a)   BCD

              b)   Without hands

4.   State three advantages of computer networking   (3mks)

5.   Name six steps in program development cycle in their logical sequence.   (3mks)

6.   State two methods of minimizing dust in a computer laboratory.   (2mks)

7.   Differentiate between primary memory and secondary memory   (2mks)

8.   List the steps that you would use to correct wrongly spelt words in a document
      using the spell-checking feature.   (3mks)

9.   Differentiate between single-user and multi-user operating systems giving an
      example of each.   (3mks)

10.   State what is meant by each of the following and give an example of where each
      is used
      a)   Magnetic Ink character Recognition (MICR)   (2 mks)

      b)   Optical Mark Read (OMR)   (2mks)

11. In the following flowchart, what will be the value of the sum when printed? Show how you arrive at your answer.

Begin

Sum = 0
R: = 0

R: = r + 1
Term: = r (2) +r
Sun: sum + term

R = 3

F

T

Print sum

Stop
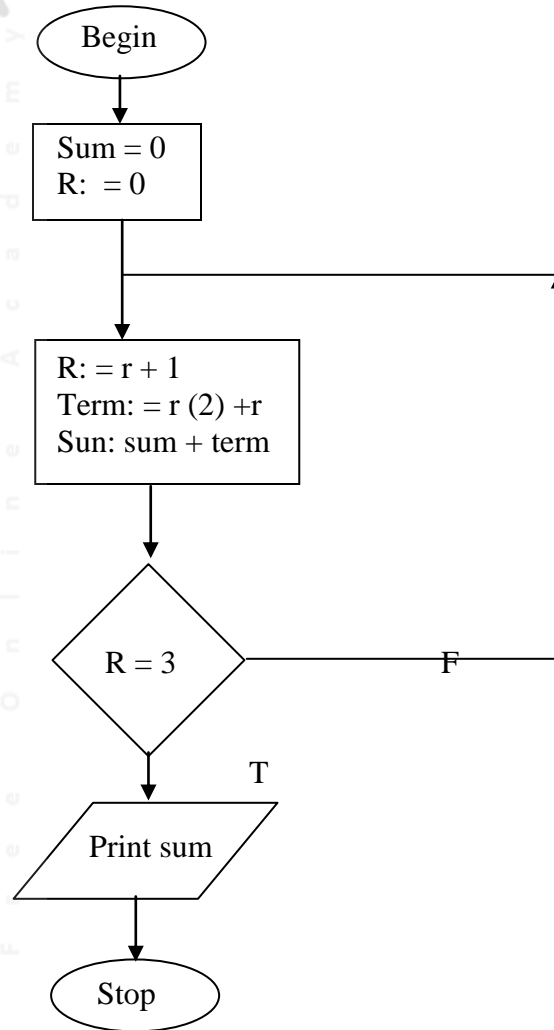
12. Distinguish between system software and application software.   (2mks)

13. Explain any three of the terms: creating, editing, printing and saving as used in word-processing   (3mks)

14. List three file organization methods in a computer   (3mks)

15. What is the use of the search and replace feature in a word-processor?   (2mks)

SECTION B (60 MARKS)
ANSWER QUESTION 16 AND ANY THREE OTHER QUESTIONS.

16.   A program is required for reading in a student's name and scores obtained in two subjects. The output of the program will consist of the student's name, the two scores, the average of the two scores and a comment. The comment is based on the average as follows:

Average		Comment
≥ 70 < 70		Good Poor

Write a program to solve the problem using a high level language. (15 mks)

17.   a)   what is meant by data communication in a computer network?   (2mks)

        b)   State what is meant by each of the following transmission media and give one advantage and one disadvantage for each .

                i)   Twisted pair cables   (3mks)

                ii)   Coaxial cables   (3mks)

                iii)   Optic fibre cables   (3mks)

        c)   List four network elements in a location area network.   (4mks)

18.   Andrew, Jane, David and zablon had tea, sausages and bananas for breakfast. They took one sausage, two sausages, three sausages and one sausage respectively. In addition, they took a cup of tea and two bananas. Tea, sausages and bananas cost Ksh. 10, 15, and 5 respectively.

        By naming columns A, B, C, … and rows 1, 2, 3 …

        a)   Construct a worksheet showing the above information.   (7mks)

        b)   State the expression you would use to obtain:

                i)   Total expenditure by David   (4mks)

                ii)   Total number of sausages taken   (2mks)

                iii)   The cost of the cheapest item   (2mks)

19.   a)   What are computer viruses?   (2mks)

b) i) State two ways through which computer viruses may be controlled
                                                            (2mks)
    ii) Explain how each of the two ways stated in b (i) above assist in
        controlling computer viruses.   (2mks)

c) Define each of the following computer terminologies   (3mks)

    i)   byte

    ii) bit

    iii) word

d) Convert the hexadecimal number FC1 to its binary equivalent.   (6mks)

20. a) A firm intends to purchase new software. List three items that should
        accompany the software.   (3mks)

    b) State and explain three ways that computer technology could make office
        work more efficient.   (6mks)

    c) Explain the meaning of each of the following computer crimes;   (6mks)

        i)   Hacking

        ii) Fraud

        iiii) Piracy

COMPUTER STUDIES
(THEORY)
PAPER 1
OCT. /NOV. 2001

INSTRUCTION TO CANDIDATES
This paper consists of two sections; a and b
Answer all the questions in section a
Answer question 15 and any other three questions form section B
All answer should be written in the spaces provided on the question paper.

SECTION A (40 MARKS)
ANSWER ALL THE QUESTIONS IN THIS SECTION

1.   Compare the two types of diskettes used in microcomputers in terms of physical size and densities.   (2mks)

2.   Why is it necessary to have a UPS in a computer laboratory?   (2mks)

3   a)   Explain what is meant by batch processing   (1mk)
     b)   Give one advantage and one disadvantage of batch processing   (2mks)

4.   List any four high level programming languages   (2mks)

5.   A 3 by 4 matrix M is to be added to another 3 by 4 matrix array N so as to give a third 3 by 4 matrix array P. Using a high level programming language, write a program segment that assigns the sum of M and N to P.   (4mks)

6.   the first column in the table below contains the formulae as stored into the cell F10 of a spreadsheet. Enter the formulae, as they would appear when copied to the cell M20 of the same spreadsheet.

Formula in F10	Formula in m20
=D10* E10	
=A$ 25	
=$ D$13	

                                                                    (3mks)
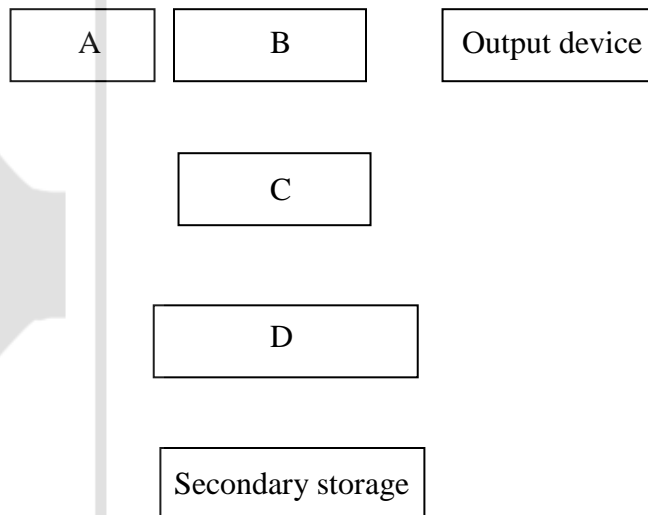
7.   Give three advantages of separating data from the applications that use the data in database design.   (3mks)

8.   Explain the impact of information on organizations in each of the following areas:
                                                                    (2mks)

     a)   Competition

     b)   Pace of growth

9. a) List any four tasks that an electronic spreadsheet should be able to perform other than calculations   (2mks)

    b) Explain what is meant by automatic recalculation as used in a spreadsheet.
                                                                              (1 mk)

10. Describe the functions of the following computer hardware components:

    a) Mouse   (2 ½ mks)

    b) Scanner.   (1 ½ mks)

11. State two differences between Disk Operating System (DOS) and WINDOWS operating system.

    b. i)   Define the term application software   (1mk)

        ii) Give one example of application software   (1mk)
12. a) Give one difference between internal and external commands in Disk Operating System.   (2mks)

    b) Name twp DOS commands that may be used for checking disk errors.

                                                                              (2mks)

13. Explain how a paragraph can be moved from one place to another in word-processing.   (2mks)

14. Define the term structured programming.   (2mks)

SECTION B (60MKS)
Answer question 15 and any other three questions from this section.

15.   a)   What is meant by each of the following terms:

       i)   psuedocode   (1 ½ mks)

       ii)   Flowchart   (1 ½ mks)

       b)   a program is required to list the first 1000 numbers in the series: 2, 4, 6, 8,
             10,.. Draw a flowchart and write a program that can be carry out this task.
                                                                           (12 mks)

16.   the following car details are to be entered in a database; make, date-of-
       manufacture, colour and cost.
             a)   Prepare a suitable database structure showing field names and their
                   field types   (5mks)

             b)   Explain how you index the data such that cars of the same make
                   and colours are together   (2mks)

             c)   Write a statement that can be used to select cars of the colour green
                                                                           (2 mks)
             d)   Give an instruction that would;
                   i)   select cars whose cost lie between 500,000/= and
                         1,000,000/=   (3 mks)

                   ii)   Determine the average cost of all cars   (3mks)

17.   a)   The diagram below represents the essential features o a computer system .
             Study the diagram and answer the questions that follow:

```
┌─────────┐   ┌─────────┐        ┌───────────────┐
│    A    │   │    B    │        │ Output device │
└─────────┘   └─────────┘        └───────────────┘

              ┌─────────┐
              │    C    │
              └─────────┘

           ┌─────────────┐
           │      D      │
           └─────────────┘

        ┌───────────────────┐
        │ Secondary storage │
        └───────────────────┘
```

i)   Name the components   (4mks)

         A
         B
         C
         D

ii)   On the diagram above, indicate the direction of data flow using arrows.   (3mks)

b)   Name the three types of buses in a computer system

                                             (3mks)

c)   Explain how CPU registers may be used to carry out a basic calculation such as:
         $2 + 7 = 9$

d)   Name two computers output devices.   (1 Mark)

18.   a)   State three ways in which computer technology may affect employment patterns in organizations   (3mks)

       b)   State three ways in which computer technology may affect employment patterns in organizations   (3mks)

       c)   Suggest three strategies that can be employed to manage resistance to change   (3mks)

       d)   Give three advantages of computerization in an organization.   (3mks)

19.   a)   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.
                                                                  (8mks)

         i)   Report file
         ii)   Back-up file
         iii)   Reference file
         iv)   Sort file

       b)   State three precautions that should be taken to ensure that diskettes are well stored.   (3 mks)

       c)   Distinguish between "serial" and Indexed sequential" file organization methods.   (2mks)

       d)   Distinguish between binary and octal number systems and give an example of each   (2mks)

COMPUTER STUDIES
PAPER 1
THEORY
NOVEMBER/DECEMBER 2002

SECTION A (40 MARKS)

1. Describe the purpose of each of the following computer functional units: (2mks)
    a)   Control
    b)   Storage

2. Explain how each of the following would affect the suitability of a room for use as a computer room: (2mks)

    a)   Burglar proofed door

    b)   Availability of taps and sinks in the room

3. State three data representation codes used in computers   (3mks)

4. State two types of documentation in program development and give the purpose of each.   (4mks)

5. Suppose a 5 element array A contains the values 9, 12, 17, 7 and 20. Find the value in a after executing the loop below:

        Repeat for k = 1 to 4
        Set A [k +1]: = A [k]
        [End of loop]   (3mks)

6. State any three activities that occur in a program compilation process (3mks)

7. The formula = k20 + P$ 18 was typed in cell L21 and then copied to cell M24 of a spreadsheet. Write the formula as it appears in cell M24.
                                                                   (2mks)

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

9. List three disadvantage of using traditional file management method   (3mks)

10. Give one disadvantage of a single processor multi-user system   (1mk)

11. List three differences between a micro-computer and super-computer.   (3mks)

12. State and explain two reasons why word processing is one of the most common applications of many computer users. (2mks)

13. write- 1 in twos compliment notation in byte form (4mks)

14. Explain the following input/output terms as used in computer systems. Give an example for each (4mks)
    a) Read
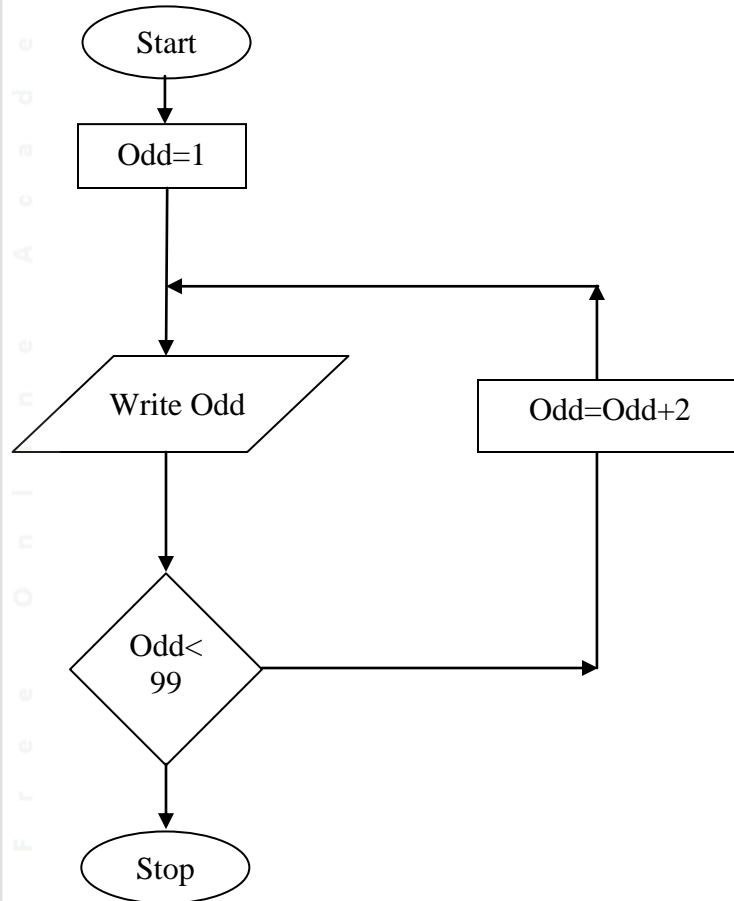
    b) Write
15. State two disadvantages of networking.

SECTION B (60 MKS)
Answer question 16 and any other three questions from this section.

16.   The following flowchart can be used to list the odd numbers between 0 and 100

a)   Write a program segment for the flowchart using a high level language.
(7mks)

b)   What would be the output from the flowchart if the statement in the decision box
is changed to: (3 mks)

i)   Odd = 100

ii)   Odd< 100

iii)   Odd> 100

c)   Modify the flowchart so that it prints only the sum of the odd number between 0 and 100   (5mks)

17. a) List five precautions that can be taken to protect data stored in diskettes
(5mks)

b) State and explain two precautions that can be taken to help recover data lost through accidental erasure. (4mks)

c) Describe each of the following data processing methods: (6mks)

   i) Batch processing

   ii) Distributed processing

   iii) Multiprogramming

18. a) i) What is a computer keyboard? (1 mk)

   ii) List four types of keys found on a computer keyboard. Give an example of each (4mks)

b) Give four differences between present day's computers and the older generation of computers (4mks)

c) i) State three advantages and one disadvantage of using a laser printer. (4mks)

   ii) Distinguish between a line printer and a page printer (2mks)

19 a) Identity three public Universities and three National Polytechnics in Kenya where further computer training is offered. In case, state the highest level of qualification that can be acquired in computer training. (6 mks)

b) Distinguish between "Job replacement" and "Job displacement" in references to computerization. (2mks)

c) Give four reasons why a firm may decide to computerize its operations. (4mks)

d) An individual has a right to demand guarantee to privacy of personal information stored on a computer.

   Give three such types of information. (3mks)

20. a) Give three comparisons of the traditional file management method of typing a document on a typewriter against using a word processor. (6mks)

b) i)   Define the term spreadsheet   (1 mk)

    ii)   Give two examples of spreadsheet packages available in the
          market today   (2mks)

c) Explain the following terms as used in a spreadsheet:
    i)   What if …analysis   (2 mks)

    ii)   Cell   (1 mk)

    iii) Formula   (1mk)

    iv)   Pie chart   (2 mks)

PAPER
(THEORY)
OCT./NOV. 2003

INSTRUCTIONS TO CANDIDATES
This paper consists of two sections' A and B.
Answer All the questions in section A
Answer question 16 and an other three questions from section B
All answers should be written in the spaces provided on the question paper

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

1. Computer systems are built from three types of physical components: processors, memories and 1/O devices.

    a) State two tasks of a processor   (2 mks)
    b) State function of 1/O devices   (1 mk)

2. Threats to the safety of computer systems take many forms such as: white-collar crime, natural disasters, vandalism and careless ness.
    Give on way as to how each of these forms of threats can be controlled.

                                                                        (2 mks)
3. a) Explain the term nibbles as used in data representation in computers
    b) Perform the following binary arithmetic giving the answers in decimal notation.   (3 mks)

        i)   1110.01111 + 11010001 .011
        ii)   1001011.011 - 111.111

4   a) Distinguish between machine and assembly language   (2mks)

    b) State the type of translator necessary for a program written in: (2mks)
        i)   High level language
        ii)   Assembly language

5. Briefly explain the purpose of the following types of program documentation:
                                                                        (3mks)
    a)   User manual
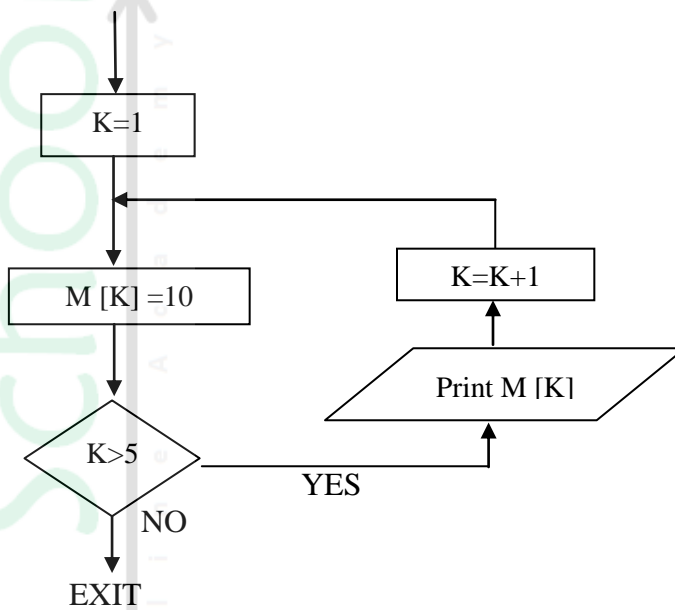   b)   Reference guide
    c)   Quick reference guide
6. State any two features of a user-friendly program.   (2mks)

7 a) Distinguish between labels and formulae with respect to spreadsheets

(2mks)

b) Consider the entries in the cells below.

Cell	B2	B3	C10	C11	C13
Entry	200	100	B2	B3	C10

State the value displayed in cell C13 (2 mks)

8. List three differences between wide area Networks (WAN) and Local Area Networks (LAN)

(3mks)

9. Study the flowchart segment below and state the last value printed from the flowchart. (2 mks)

```
        |
        v
    ┌───────┐
    │ K=1   │
    └───────┘
        |
        v
┌─────────────┐              ┌─────────┐
│ M [K] =10   │              │ K=K+1   │
└─────────────┘              └─────────┘
        |                         ^
        v                         |
                            ╱─────────────╲
                            │  Print M [K] │
                            ╲─────────────╱
     ◇                            ^
    ╱ K>5 ╲───── YES ─────────────┘
     ◇
       NO
        |
        v
      EXIT
```

10. a) What is an expert system (1mk)

    b) State any two components of an expert system (2mks)

11. Give two reasons why optical disks are better storage media compared to floppy diskettes (2mks)

12. What are the Dos commands used for the following? (2mks)

    a) Changing directories

    b) Viewing directories

    c) Renaming directories

    d) Deleting a directory

13. Distinguish between copying and moving text (2mks)

14. a) Name two methods of paper orientation (1mk)

    b) Name two keys used to delete text in a document (1 mk)

15. Name two features a Database package (2mks)

SECTION B (60 MKS)
Answer question and any other three questions from this section

16. Study the flowchart below and answer the questions that follow.
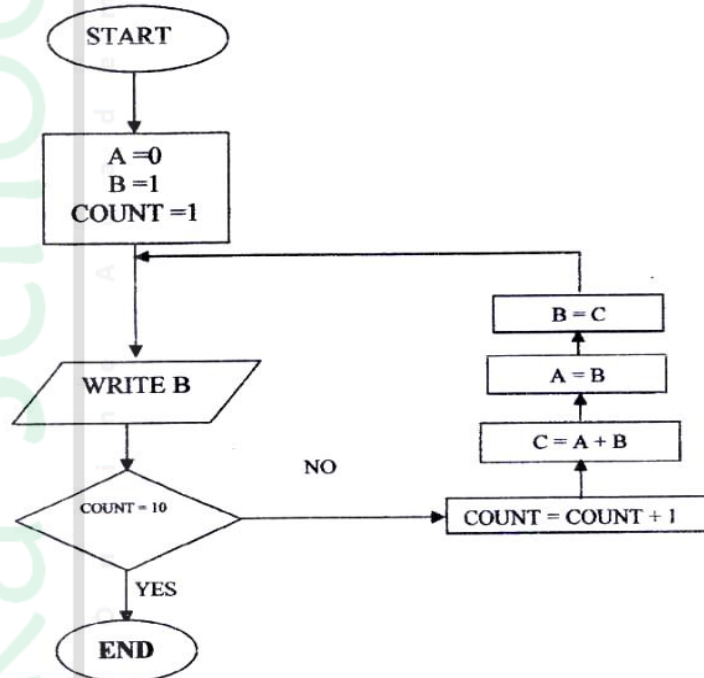
a) Write a high-level language program for the above flowchart (7mks)

b) List the outputs of the flowchart above   (5 mks)

c) Modify the flowchart so that it adds up all its outputs and displays the sum obtained   (3mks)

17. A computer specification has the following details:
Pentium II
1.44 MB floppy disk drive
20 GB hard disk
Full multimedia
17" SVGA monitor
Pre-installed operating system
Pre-installed office suite

a) What is meant by
   i)   1.44 MB floppy disk drive?
   ii)   20 GB hard disk?
   iii) 17" SVGA monitor

b)   Which operating system might be pre-installed in this computer and why?   (2mks)

c)   List three multimedia components   (3 mks)

d)   i)   what is meant by computer aided manufacture?   (2 mks)

       ii)   Give two examples of computer aided design software.   (2mks)

18.   a)   Give three examples of network software   (3mks)

       b)   List any three items that may be referred to as data terminal equipment in a network   (3 mks)

       c)   Briefly explain the following terms as used in networking   (4mks)
           i)   Remote communication
           ii)   Distributed processing

       d)   State three advantages and two disadvantages of mesh network topology.   (5mks)

19.   a)   a company has decided to computerize their operations. They have decided to purchase package instead of developing their own programs. Give three advantages and two disadvantages of this approach.   (5mks)

       b)   i)   explain why a value such as 611233444555 may be displayed as ######### When typed in a cell of a spreadsheet   (2mks)

           ii)   How can the problem in b (i) above be corrected?   (2mks)

       c)   With reasons, briefly describe the most appropriate type of printer output device for the output of: (6mks)
           i)   Customer invoices on multi-part stationery
           ii)   Letters to customers
           iii)   Detailed engineering designs

20.   a)   Distinguish between the following pair of terms   (6mks)
           i)   Data verification and data validation
           ii)   Data encryption and passwords
           iii)   Dry run and walk through

       b)   Draw a labeled diagram to illustrate the internal structure of a diskette.   (4mks)

       c)   Give two differences between post office mail and electronic mail (E-mail)   (2mks)

       d)   Speed and accuracy are some of the advantages of using computers in banking. State three other advantages of use of computers in banking.   (3mks)

COMPUTER STUDIES
PAPER 1
(THEORY)
OCT./NOV. 2005
**2 ½ HOURS**

SECTION A (40 MKS)
Answer all the questions in this section.
1.   a)   What is disk formatting?   (1mk)

      b)   Indicate whether the following devices are used for input or output
                                                                                     (2mks)
            i)   Plotter
            ii)   Light pen
            iii)   Mouse
            iv)   Visual display unit
2.   a)   Explain why the following give one reason why they are not allowed in a
            computer laboratory.   (2mks)

      b)   For each of the following give one reason why they are not allowed in a
            computer laboratory.   (2mks)

            i)   Smoking
            ii)   Eating foods
3.   Distinguish between Real, integer and Character data types as used in
      programming   (3 mks)

4.   The cells k3 to K10 of a worksheet contain remarks on student's 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"
                                                                                     (3mks)
5.   a)   State the purpose of registers in a computer system   (1mk)
      b)   Name two multiprogramming operating systems   (2 mks)
6.   a)   A series file comprises of records placed in positions 1 to 10. State the
            position of the end of file marker.   (1mk)

      b)   State the purpose of each of the following: (2mks)
                        i)   File server software
            ii)   Communication software
7.   a) Name the control structure depicted by the flowchart below.   (1 mk)
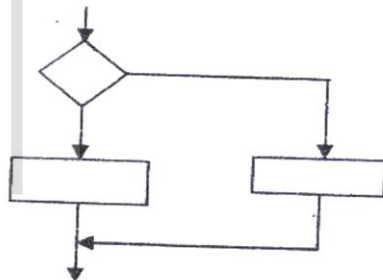
b) Explain the following terms as used in program implementation.   (2mks)
    i)   Parallel running

    ii)   Direct change over

8. Consider the linear arrays:

    i)   AAA (5:50)

    ii)   BBB (-5:10)

    iii)   CC (18)

        Find the number of elements in each array   (3mks)

9. Define the term artificial intelligence   (2 mks)

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

11 Explain binary Coded Decimal code of data representation   (1 mk)
    a)   Indenting

    b)   Alignment

    c)   Word wrap

12. Outline two ways in which computer can be used in hotels   (2 Marks)

13. a)   Explain Binary Coded Decimal code of data representation (marks)

    b)   Write the number 41_{10} in BCD notation   (1 mk)
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   (2
     mks)

SECTION B (60 MARKS)

16.　a)　State the stage of program development in which　　(4 mk)
　　　　i)　A flowchart would be drawn
　　　　ii)　The programmer would check whether the program does as required
　　　　iii)　The user guide would be written
　　　　iv)　The requirements specifications would be written.

　　b)　State the output of following flow chart segment　　(1mk)
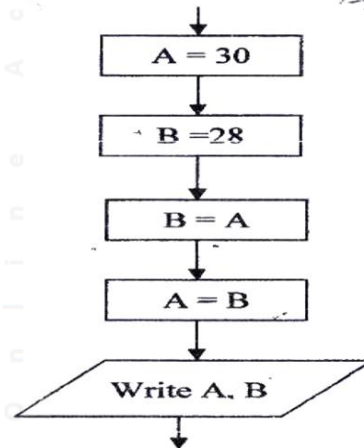
　　c)　i)　Draw flowchart to compute the combined resistance ® of two resistors R_1 and R_2 in parallel using the formula;

$$R = \dfrac{1}{{}^1\!/_{R\,1} + {}^1\!/_{R2}}$$

　　　　　　　　　　　　　　　　　　　　　　　　(5mks)
　　　　ii)　Write a program using Pascal or C languages for the flowchart in C (i) Above.　　(5 ½ mks)

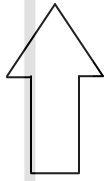17.　a)　List three paragraph formatting activities in word processing　　(3mks)
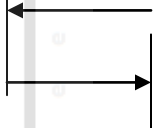
　　b)　Differentiate between bolding and highlighting text　　(2mks)
　　c)　The following information shows the income and expenditure for "bebayote " matatu for five days. The income from Monday to Friday was Kshs. 4,000, 9,000, 10, 000, 15,000 and 12,000 respectively while the expenditure for the same period was Kshs. 2,000, 3,000, 7,000, 5,000 and 6,000 respectively
　　　　i)　Draw a spreadsheet that would contain the information. Indicate the rows as 1, 2, 3 …. And the columns as a, B, C　　(4mks)
　　　　ii)　State the expression that would be used to obtain:
　　　　　　I　Monday's profit　　(2mks)
　　　　　　II　Total income　　(2mks)
　　　　　　III)　Highest expenditure　　(2mks)

18. a) Subtract 011_2 from 1001_2 (1mk)

b) Using two's compliment, subtract 7 from 4 and give the answer in decimal notation (4mks)

c) Convert

    i) $91B_{16}$ to octal (3mks)

    ii) 376_8 to hexadecimal (3mks)

    iii) 9.625_{10} to binary (4 mks)

19. a) Explain what the following DOS commands will do when executed.

    i) A: \copy *.* B: (2 mks)

    ii) C: \> ERASE*. DOC (2mks)

    iii) b: \> Md EXAMS (2mks)

b) i) With the aid of a diagram, explain hierarchical (tree) network topology (3mks)

    ii) List two advantages and two disadvantage of hierarchical network topology. (4 mks)

    Advantages:-

    Disadvantages:

20. a) Name and explain the function of the keyboard keys represented by the following symbols.

    i) (2mks)

    ii)

    iii) (2mks)

b) Simulation is one of the application areas of computers

    i) What is meant by the term simulation (1mk)

    ii) Name two application areas of simulation (2 mks)

    iii) State three advantages of computer based simulation (3 mks)

c) Explain three ways in which computers have impacted on education

(3mks)

COMPUTER STUDIES
PAPER 1
(THEORY)
OCT./Nov. 2006
2 ½ hours

SECTION A (40 MARKS)

1. What is meant by
    a) Analogue data
    b) Digital data   (4 mks)

2. Distinguish between transcription and transposition types of errors and give an example of each   (4mks)

3. a) what are peripheral devices?   (1mk)

    b) Give two examples of peripheral devices   (1mk)

4   a) What meant by the term user-friendly as used in software development?
                                                            (1mk)
    b) Distinguish between the terms single-tasking and multi-user as used in operating systems   (2mks)

5. What actions should be taken in case of a fire outbreak in the computer laboratory?   (4mks)

6   a) What is an Internet Service Provider?   (1mk)

    b) An employee in a business company is charged with the responsibility of putting the company advertisements on the Internet.
       i) State the professional title of the employee.   (1mk)

       ii) Give an example of software used by this employee to carry out the above task.   (1mk)

7. Differentiate between COM ports and LPT ports   (2mks)

8. Explain two ways in which ICT can enhance commerce.   (2mks)

9. Explain the following software terms:
    a) Portability   (1 mk)
    b) Modularity   (1 mk)

10. a) State two application areas of a desktop publishing software.   (2mks)
    b) Explain the following graphic terms:
       i) Rotate   (1 mk)
       ii) Crop   (1mk)

12. a) List two arithmetic operations that can be performed on a row of numeric data in a word processing table.   (1 mk)

b)   In each case of (a) above, write the expression used.   (2mks)

13.   List two methods of gathering information during system development process.
                                                                        (2mks)
14.   Name three types of optical disks.   (3mks)

15.   The diagram below shows a formatted plate surface of a storage disk.
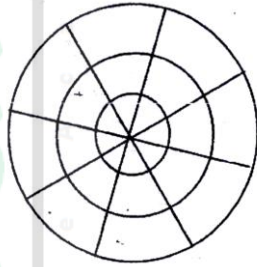
Shade and label:
a)   one sector   (1mk)
b)   One block   (1mk)

SECTION B (60 MKS)

Answer question 16 and any other three questions from this section in the space provided

16   a)   List two examples of:
         i)   Third generation languages   (2mks)
         ii)   Object oriented languages   (2 mks)
       b)   Draw a flowchart to compare three non-equal numeric values A, B, C and prints the largest of the three.   (11 mks)

17   a)   One of the functions of an operating system is job scheduling. Explain what is mean by job scheduling.   (1mk)

       b)   List and explain three types of user interfaces.   (6 mks)
       c)   Describe the following categories of software:
         i)   Firmware   (1mk)
         ii)   Proprietary software   (1mk)
       d)   a new company XYZ intends to go into the business of desktop publishing. Advise the company on three computer hardware system specification features to consider as a measure of enhancing performance.
                                                 (6 mks)

18.   a)   distinguish between the following sets of terms as used in spreadsheets.
                                            (2mks)

         i)   Worksheet and workbook
         ii)   Filtering and sorting
       b)   State one way in which a user may reverse the last action taken in a spreadsheet package.   (1 mk)
       c)   The following is a sample of a payroll. The worksheet row and column headings are marked 1, 2, 3, . and A, B, C. respectively

	A	B	C	D	E	F	G	H
1	NAME	HOURS WORKED	PAY PER HOUR	BASIC PAY	ALLOWANCES	GROSS PAY	TAX DEDUCTIONS	NET PAY
2	KORIR	12	1500					
3	ATIENO	28	650					
4	MUTISO	26	450					
5	ASHA	30	900					
6	MAINA	18	350					
7	WANJIKU	22.5	250					
8	WANYAMA	24.5	250					
9	OLESANE	17	180					
10	MOSET	33	700					
	TOTALS							

Use the following expressions to answer the questions that follow:
- Basic pay = hours worked x pay per hour
- Allowances are allocated at 10% of basic pay
- Gross pay = basic pay + allowances
- Tax deductions are calculated at 20% of gross pay
- Net pay = Gross pay – tax deductions.

Write formulae using cell references for the following cells;
i)   D2   (1mk)
ii)   E4   (1mk)
iii)   F10   (1mk)
iv)   G7   (1mk)
v)   H5   (1mk)

d)   i)   State three ways of moving round the page in a Desktop Publishing
                window.   (3mks)

        ii)   State two ways on how information & Communication Technology (ICT)
                can be used to reduce the spread of HIV/AIDS   (2mks)
19.   a)   Describe the following terms with reference to security of data: (1 mk)
                i)   Log files
                ii)   Firewalls   (1 mk)

        b)   A student' database comprises of students' details table and fees received
                table as shown below:

                Students' details table

Surname
Middle Name
First Name
Admission Number
Course

                Fees Received table

Date
Amount
Receipt No.

i)   State the primary key field for each table.   (2mks)

ii)   State the field, which should serve as the linking field for the two tables.

(2mks)

c) Describe the following terms with respect to computer security:
   i) Logic bombs (2mks)
   ii) Physical security (2mks)
   iii) Tapping (2mks)

d) List three functions of antivirus software. (3mks)

20. a) The diagram below shows four common network topologies A, B, C and D.
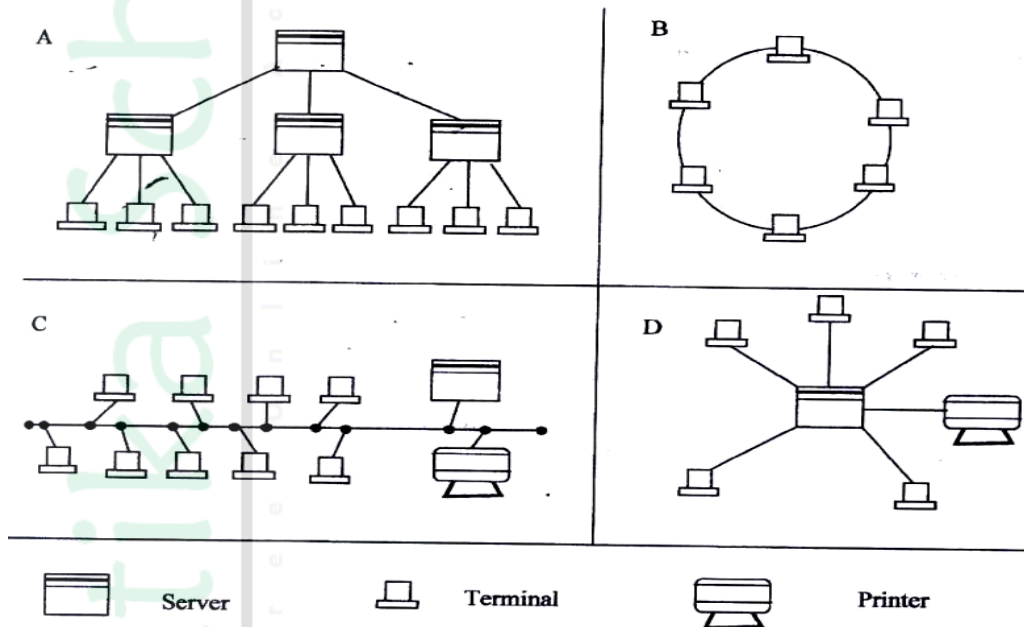
i) Name the network topologies labeled a, B, C and D. (4mks)
   A
   B
   C
   D

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

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

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

b) Differentiate between Interment and World Wide Web: (2mks)

c) Describe the following network services and identify their applications.

   i) Voice mail (2mks)
   ii) Video conferencing (2 mks)

COMPUTER STUDIES
PAPER 1
(THEORY)
OCT/NOV/2007
2 ½ HOURS.

SECTION A (40 MKS)
Answer all the questions in this section in the spaces provided.

1. Describe the computer booting process. (2 mks)

2. State the functions of the following keys on the computer keyboard (2 mks)

   a) Backspace

   b) Insert (ins)

3. Jane has noticed the following problems in her computer keyboard (2mks)
   - It is taking longer time to start up;
   - It is often hanging;
   - Applications are taking longer to load.

   State three possible causes of these problems and how they can be solved (3mks)

4. a) Define authenticity as used in software selection (1mk)

   b) List four ways of acquiring software in an organization (2mks)

5. some of the storage disk available are: zip disks, 3 ½ inch floppy disks, DVDs and 5 ¼ inch floppy disks. Arrange these devices in ascending order of storage capacity. (2mks)

6. You have been asked to change your computer password. State a precaution you need to take in order to avoid each of the following:

   a) Forgetting the password (1mk)

   b) Hacking (1mk)

7. State four benefits of using a computer in a school library (2 mks)

8. Using six bits, find the two's complement of -23_{10}. (4 mks)

9. Explain data series, axis and legends as used in spreadsheet charts. (3mks)
   - Data

   - Axis

   - Legend

10. a) Describe the term data integrity. (2 mks)

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

11.　State the function of each of the following:
　　a)　　Network interface card　　　　　　　　　　　　　　(1 mk)

　　b)　　Network protocol　　　　　　　　　　　　　　　　(1 mk)

　　c)　　Hub　　　　　　　　　　　　　　　　　　　　　(1mk)

12.　List four types of publications that can be designed by using desktop publishing software.　　　　　　　　　　　　　　　　　　　　　　(2mks)

13.　Differentiate between the following pair of terms as used in database design:

　　a)　　Input mask and design.　　　　　　　　　　　　　　(2 mks)

　　b)　　Table and query　　　　　　　　　　　　　　　　(2mks)

14.　List four factors to be considered when purchasing an operating system.　　(2mks)

15　Write an algorithm to compute the area of a triangle.　　　　　(2mks)

SECTION B (60 MARKS)
Answer question 16 and any other three questions from this section in the spaces provided

16.   Study the flowchart below and answer the questions that follow
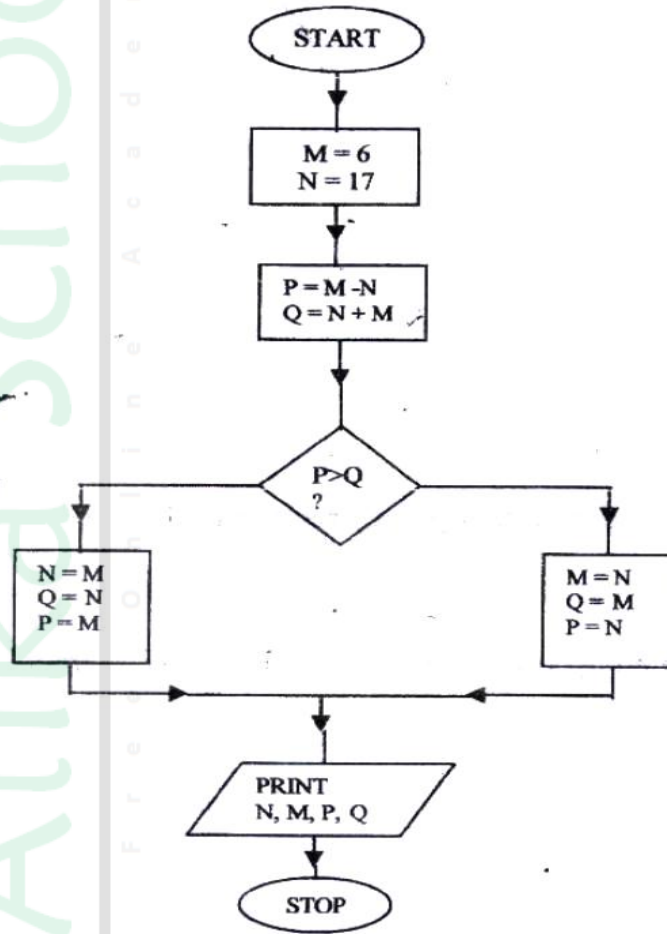
i)   Name the control structures used in the flowchart   (2mks)

ii)   Determine the values of M, N, P and Q.   (4 mks)

        M…………………………….. N…………………………..
        P …………………………….. Q ………………………

iii)   Write the pseudo code for the flowchart   (7mks)

b)   List **four** functions of an assembler   (2 mks)

17. Define the following web related terms:

    i)   Web browser   (1mk)

    ii)   Hyperlink   (1mk)

    iii)   Hypertext document   (1mk)

    b)   List six activities performed on the web   (3mks)

    c)   An institution has ten stand alone computers
          i)   Suggest with reasons the most appropriate topology required to inter-connect the computers.   (3mks)

          ii)   State the necessary steps required to connect the computers to the internet.   (4mks)

    d)   Below is an email address:

        ggitau   @moest. edu.ke
          ↓   ↓   ↓
          A   B   C

        Name the parts labeled:
        i)

        ii)

        iii)

18. A computer C directory has folders for form 1, form 2, Form 3 and form 4. Each class has student's folders labeled according to their number. The students create their own folder for the subject the are studying based on the table shown below

Form 1	Form 2	Form 3	Form 4
OS	SP	Pr.	ADB
WP	DTP DB	Internet	

    a)   Assuming there is one student per class, draw the corresponding directory tree structure.

                                                     (6 mks)

    b)   i)   a form four student wants to create a folder to store her project. State the path for that project folder.   (2 mks)

          ii)   Suggest how the student can ensure that:

1. Work is not lost in case the hard disk fails. (1mk)
2. The project is not copied by other students. (1mk)

c) i). Other than I/O devices, list other three devices under the control of the operating system. (3mks)

ii) Explain any one of the devices named in C (i) above (1mk)

d) Define the term trouble shooting (1mk)

19. A manager wishes to replace the current manual system with a computerized one
a) Describe three main areas that must be evaluated to justify the replacement

(6mks)

b) List the three areas that would be considered in the requirements specifications. (3mks)

c) State and explain three ways that can be followed to replace the current system (6mks)

20. a) a head teacher keeps the following student details in a database: Name, address, Town, Date of Birth, Marks scored, Fees paid.

i) Name the most appropriate primary key. Give a reason

(2mks)

ii) For each item in the student's details above, indicate its most appropriate data type as used in the database. (3mks)

iii) Explain why input screens are better data entry designs than

entering data directly to a table. (2mks)

b) List two career opportunities associated with databases. (2mks)

c) Distinguish between:
i) A table in word-processing application and a table in a database application (2mks)

ii) Mouse pointer and insertion point. (2mks)

d) Outline the steps to be followed in order to merge cells in a word processing table. (2mks)