

NAME .....

DATE .....

INDEX NO. .... CANDIDATE'S SIGNATURE .....

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

**MBOONI WEST SUB - COUNTY FORM FOUR JOINT EVALUATION TEST 2014**

*Kenya certificate of Secondary Education*

451/1  
COMPUTER STUDIES  
PAPER 1  
(THEORY)  
JULY/AUGUST 2014  
TIME: 2 ½ hours

**Instructions to Candidates**

- (a) Write your name and index number in the spaces provided above.
- (b) This Paper consists of two sections A and B.
- (c) Answer **ALL** the questions in section A.
- (d) Answer **question 16** (compulsory) and any other **THREE** questions from section B.
- (e) All answers should be written in the spaces provided.
- (f) This paper consists of 9 printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing

**FOR EXAMINER'S USE ONLY**

| Section | Questions          | Candidate's score |
|---------|--------------------|-------------------|
| A       | 1- 15              |                   |
| B       | 16                 |                   |
|         | 17                 |                   |
|         | 18                 |                   |
|         | 19                 |                   |
|         | 20                 |                   |
|         | <b>TOTAL SCORE</b> |                   |

**SECTION A (40 marks)**

**Answer all questions in this section in the spaces provided**

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

a) RAM

.....  
.....

b) Hard disk

i) .....

ii) .....

2. Outline two application areas of artificial intelligence (2 marks)

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.....

3. Explain the following terms as used in desktop publishing (3 marks)

a) Embedded object

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.....

b) Auto flow

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.....

c) Zoom

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.....

4. State four ways of identifying an illegal copy of an operating system (4 marks)

i) .....

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ii) .....

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iii) .....

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.....

iv) .....

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5. Give three ways in which horticultural farmers can benefit from the use of information and communication technology (3 marks)

i) .....

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ii) .....

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.....

iii) .....  
.....

6. Define the following terms (2 marks)

a) Password  
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.....

b) Authentication  
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.....

7. Outline three roles of an internet service provider(ISP) (3 marks)

i) .....  
ii) .....  
iii) .....

8. State two roles of

a) Webmaster (2 marks)  
i) .....  
ii) .....

b) Network administrator (2 marks)  
i) .....  
ii) .....

9. List three advantages of using computer aided design (3 marks)

i) .....  
ii) .....  
iii) .....

10. List two files used in mail merging (2 marks)

i) .....  
ii) .....

11. State any three disadvantages of using the magnetic tape (3 marks)

i) .....  
ii) .....  
iii) .....

12. With reference to cables list two reasons why a keyboard may not function correctly (2 marks)

i) .....  
ii) .....

13. Give three ways in which robots can be used in the army during war (3 marks)

i) .....  
ii) .....  
iii) .....

14. The formula = F24 + N\$18 was typed in cell J25 and was copied to cell L21 of a spreadsheet. Write the formular in the destination cell (1 mark)

.....

.....

15. Simulation is one of the application areas of computers.

a) What is meant by the term simulation (1 mark)

.....

.....

b) Name two application areas of simulation (2 marks)

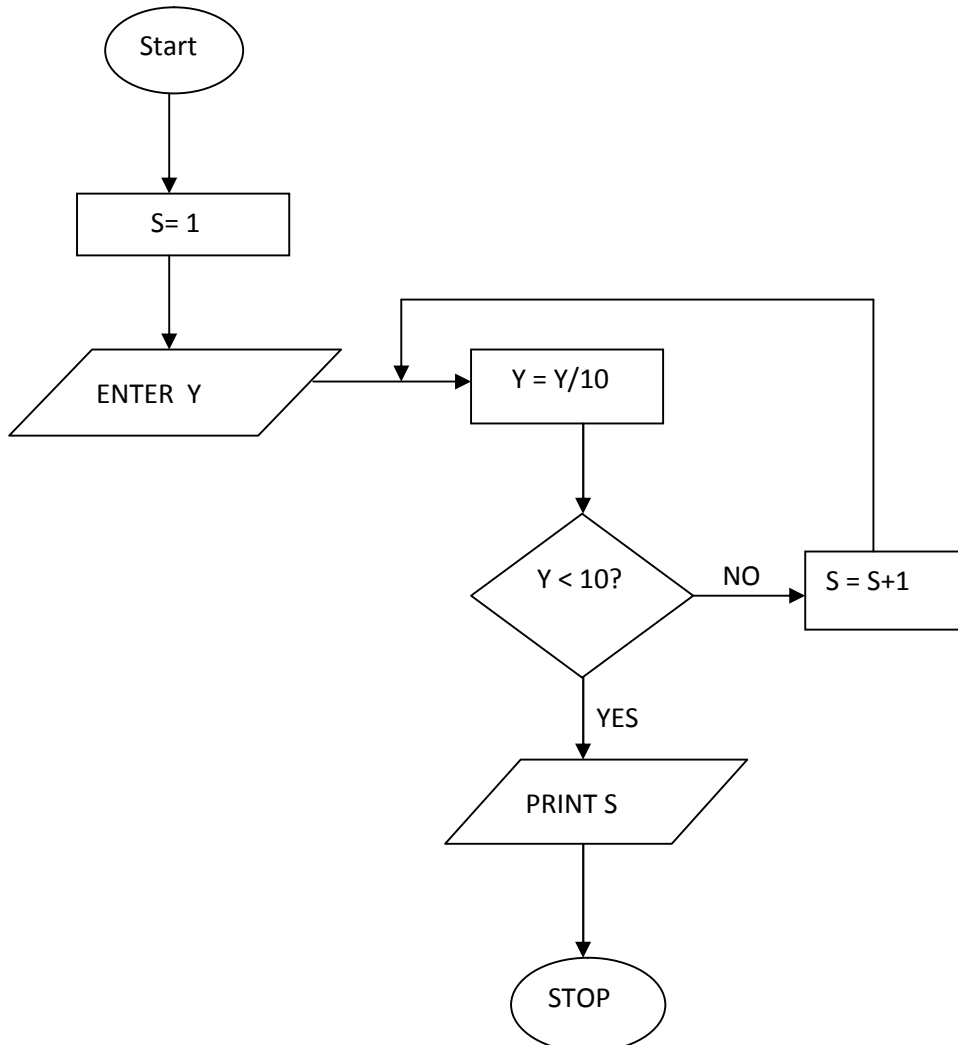
i) .....

ii) .....

**SECTION B (60 MARKS)**

Answer question 16 and any other THREE questions in this section

16. Study this flowchart and use it to answer questions that follow



a) Give the expected output from the flowchart when the value of Y is

i) 48

.....  
.....

ii) 9170

.....  
.....

iii) 800

.....  
.....

b) Write the pseudocode that can be used to create a program represented by the above flowchart (6 marks)

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c) State three advantages of low-level languages (3 marks)

- i) .....
- ii) .....
- iii) .....

17. Use twos complement to perform the following arithmetic operations

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

.....  
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ii)  $10111_2 - 1011_2$  (3 marks)

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

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c) Convert the decimal fraction  $10.375_{10}$  into its binary equivalent (4 marks)

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d) Assuming the existence of base six, list the numbers used in the number system

.....  
.....  
.....  
.....

18.

a) A company in town A wishes to link its offices that are spread across the city through wireless or fibre optic network media.

i) State three advantages of using wireless over fibre optic network media (3 marks)

a) .....  
b) .....  
c) .....

ii) Outline two wireless communication devices (2 marks)

a) .....  
b) .....

b) i) Differentiate between Ethernet and token ring topology (2 marks)

.....  
.....  
.....

ii) List two advantages and two disadvantages of hierarchical network topology (4 marks)

**Advantages**

a) .....  
.....  
b) .....  
.....

**Disadvantages**

a) .....  
.....  
b) .....  
.....

c) State two importance of the Front-End Processors (FEP) in a network system (2 marks)

i) .....  
ii) .....

d) What do you understand by peer to peer networking (2 marks)

.....  
.....

19. a) Give two reasons for storing files in directories and sub directories

- i) .....
- ii) .....

b) Explain time sharing data processing mode giving two advantages and two disadvantages of its application (6 marks)

**Advantages**

- i) .....
- ii) .....

**Disadvantages**

- i) .....
- ii) .....

c) List down four importance of training the staff or users after the implementation of a new system (4 marks)

- i) .....
- ii) .....
- iii) .....
- iv) .....

d) List three contents of a feasibility study report (3 marks)

- i) .....
- ii) .....
- iii) .....

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

| Name     | Class | Admission number | Membership number | Group     |
|----------|-------|------------------|-------------------|-----------|
| Aruya    | 4E    | 3740             | S001              | Serengeti |
| Mercy    | 3E    | 3802             | T001              | Tsavo     |
| Ominde   | 2N    | 3949             | T003              | Tsavo     |
| Caro     | 4W    | 3762             | M001              | Mara      |
| Miriam   | 3N    | 3800             | A001              | Amboseli  |
| Zach     | 2E    | 3925             | S002              | Serengeti |
| Antony   | 2W    | 3926             | N001              | Nairobi   |
| Januaris | 4N    | 3946             | AB001             | Aberdare  |
| Pauline  | 3E    | 3805             | T002              | Tsavo     |
| Mary     | 1W    | 4029             | N002              | Nairobi   |
| Daniel   | 1N    | 4013             | M002              | Mara      |



a) Describe the field values, records and file

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.....  
.....  
.....  
.....  
.....

b) State the most appropriate data type for the fields

i) Admission number (1 mark)

.....  
.....

ii) Membership number (1 mark)

.....  
.....

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

.....  
.....

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)

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.....  
.....  
.....

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)

.....  
.....  
.....