

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

2021 TRIAL 3 OCT/NOVEMBER INTERNAL EXAMINATION

Kenya Certificate of Secondary Education (K.C.S.E.)

Name.....

Adm No.....

Stream.....

Date

Sign

INSTRUCTIONS TO CANDIDATES

- ⇒ Write your name and index number in the spaces provided above
- ⇒ Sign and write your name in the spaces provided above
- ⇒ This paper consists of **two** sections; A and B
- ⇒ Answer all questions in section A
- ⇒ Answer question 16 and any other three questions from section B
- ⇒ All answers should be written in the spaces provided on the question paper

For official use only

Section	Question	Candidates score
A	1-15	
B	16	

	17	
	18	
	19	
	20	
TOTAL SCORE		

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

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

(ii) RAM

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

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

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

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

(a) Dot matrix

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



(b) Thermal printer.

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

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

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

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

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

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

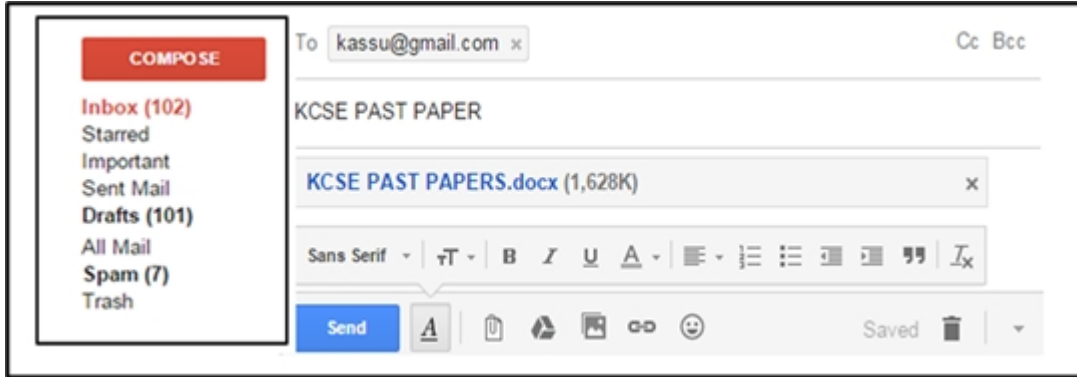
.....
.....
.....
.....
.....

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)

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



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

.....

.....

(b) Spam

.....

.....

.....

(c) Inbox

.....

.....

.....

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

.....

.....

.....

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

.....

.....

.....

.....

.....
.....

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.

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

b. Sort file.

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

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

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

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

a. Simulation

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

b. Tutorial

.....

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

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)

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

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

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

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)

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

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

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

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

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

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

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

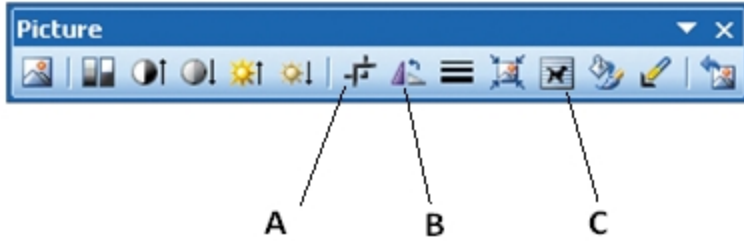
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....



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)

b. Convert each of the following numbers system.

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

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

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

$1010.11 + 111.10 - 101.11$

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

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

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

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

- i. Guided transmission medium and unguided transmission media

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

- ii. Multiplexing and demultiplexing

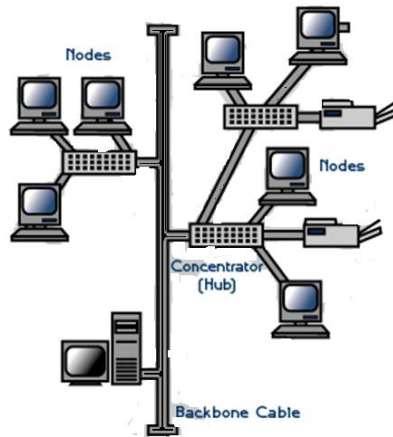
.....
.....
.....
.....

- iii. Logical and physical Topology

.....
.....

.....
.....

b. Below is a diagram of a network topology.



i. Name the above topology

(1 Mark)

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

ii. State two advantages and two disadvantages of using the topology named above

(4 Marks)

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

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

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

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

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

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

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

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

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

.....
.....

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

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

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

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)

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

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

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

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

