

Name. _____ Class. _____ Index No. _____ / _____



Date. _____

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KAPSABET HIGH SCHOOL

451/1
COMPUTER STUDIES
Paper 1
(Theory)
NOV 2020
2½ hours.

Mock Exams

INSTRUCTIONS TO CANDIDATES:

Instructions to Candidates

- Write your name and index number in the spaces provided above.
- Sign and write the date of examination in the spaces provided above.
- This paper consists 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** answers should be written in the spaces provided on the question paper.




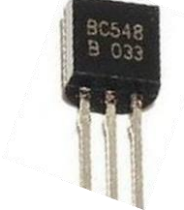
For Examiner's Use Only

Section	Questions	Score
A	1 - 15	
B	16	
	17	
	18	
	19	
	20	
Total Score		

This paper consists of **19** printed pages Candidates should check the question paper to ensure that all the printed pages are printed as indicated and no questions are missing.

SECTION A (40 MARKS)

- 1) Match the generation of computers to technology that was used by the generation by drawing straight lines.
(2marks)

<u>Technology used</u>	<u>Computer generation</u>	<u>Technology used</u>
 	<p>1st Generation</p> <p>2nd Generation</p> <p>3rd Generation</p> <p>4th Generation</p>	 

- 2) The following image shows text in its original form and after it has been subjected to Desk Top Publishing formatting. One text was subject to **kerning** and the other to **Tracking**. Complete the column with the heading “Formatting Applied” by indicating which of the two formatting has been applied each text.

Text before formatting	Text after formatting	Formatting Applied
VAST.	VAST.	
VAST.	V A S T .	

- 3) **State one** difference between a web-conference and a video-conference. (1mark)

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- 4) **Explain** why an email system should be configured to prevent spam email. (2marks)

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- 5) When a new system is being developed analysis takes place. **One** method of researching the current system is **interviewing**.

- a. **List two** other methods of researching the current system. (1mark)

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b. **Explain two** drawbacks of using interviews.

(2 marks)

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6) State the meaning of the term data communication.

(2 marks)

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7) **Describe three** benefits of a doctor using an expert system to help diagnose a patient's illness.

(3marks)

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8) The use of ICT at workplace has enable a change in work pattern. For instance, employees are able to **compress** their working hours or make the working hours **flexible**.

a) **Differentiate** between **compressed** and **flexible** working hours

(2 marks)

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b) **State one** way through which ICT has enabled job sharing.

(1mark)

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9) **Differentiate** between a black hat hacker and a white hat hacker.

(2marks)

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10) Systems can be implemented in different ways; one of these is direct changeover.

(a) **Describe three** other methods of implementation.

(3marks)

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(b) **For One** method described in (i) above, give an advantage when compared with direct changeover. (1mark)

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11) **Illustrate** a bus computer network. (2marks)

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12) One of the computer lab use safety and precaution is that of not allowing students to eat or drink while in the computer room. **Give two** reasons why this rule is enforced in a computer laboratory (4marks)

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13) A new system has been developed and documentation has been produced. There are two types of documentation; user and technical. **Explain** what technical documentation is used for. (3mks)

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14) This email has been received by a bank customer who believes it may be fraudulent.

From: no_reply@manger.boiyobank.com

Subject: Account Status

Dear Costumer, Due to resent activity on account, we have reason to believe that your account has been compromised . For your security, we have temporarily prevented access to your account. Boiyo Bank safeguards your account when there is a possibility that someone other than you tried to log in.

You may be getting this message because you signed in from a different location or device. If this is the case, your access may be restored when you log in your username and password..

For immediate access, you are required to follow the instruction below to confirm your account in order to secure your personal account information.

Click [here](#) to log In to your Account If you have any problems trying to log in to your account, please reply to this email giving your username and password and we will check your setting.

Regards, Kipigeno Culpritich Chief Customer Officer CardHolder Services

Give four reasons why the customer may be suspicious (4marks)

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15) **State two** reasons why after systems implementation, a system must undergo constant review and maintenance. (4mks)

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SECTION B 60 MARKS

(Answer question 16 and any other three questions)

16. (a) Python is an object oriented high level programming language: **State** the meaning of each of the following terms:

i) Programming language. (1mark)

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ii) High level Programming language. (1mark)

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iii) Object oriented programming language. (1mark)

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(c) A program is required that would prompt a user to key in three integers. If the user does not key in three integers, the program should display the message "**You must key in three integers... Press any key to retry**" then allow the use to key in the integers again. Upon successful keying in of the three integers, the program should compare them -two integers at time- to determine the largest integer. The program should then display the **largest** integer. After the display of this integer, the program should prompt the user with the message "**Compare another set of three integers (Y/N)...**" If the user selects "**Y**", the program should allow the keying in of another set of three integers, if the selection is "**N**", the program should stop. However, if neither "**Y**" nor "**N**" is selected; the program should display the message "**Invalid choice... try again**" then present the message " **Compare another set of three integers (Y/N)...**" again. The **largest** integer should be displayed if only one the keyed in integer is the largest. The program should display the message "**No large integer found..**" if the largest integer does not exist.

i) Write a pseudocode for this program (6 marks)

ii) Draw a flowchart for this program

(6 marks)

17(a) **State** the meaning of the term **computer system**? (2marks)

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(b) Computers have both primary and secondary storage.

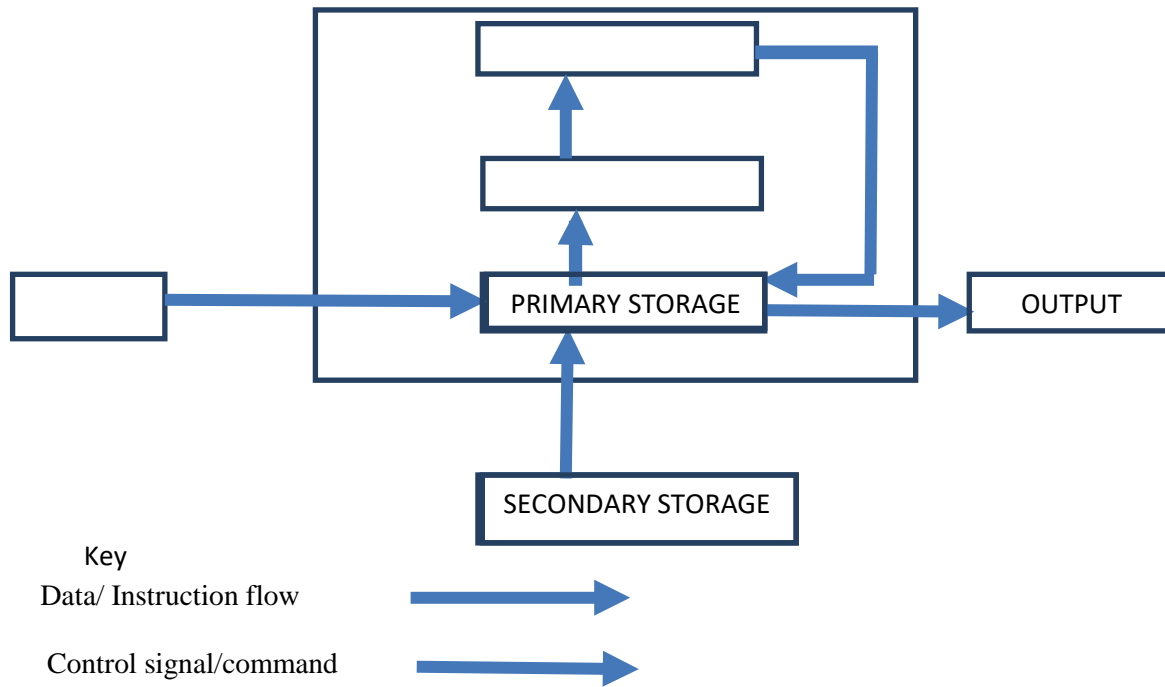
i) **Give two** reasons by secondary storage in needed. (4marks)

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ii) **Give two** reasons by Primary storage in needed. (4marks)

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(c) Complete the following diagram of a layout of a computer system



18) (a) Computer operating systems have developed since early computers used Command Line Interfaces (CLI). Many computers now use Graphical User Interfaces (GUI), some of which are capable of using touch screen technology.

(i) **State** the meaning of the term **touchscreen technology**? (1mark)

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(ii) **State four** differences between **CLI** and **GUI** operating system? (4marks)

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(b) **State one** difference between a **multi-tasking** and **Single-tasking** operating system. (2marks)

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(c) **Explain one** benefit of the following disk management activities

(i) Partitioning. (2marks)

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(ii) Regularly carrying out Diagnosis. (2marks)

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(d) **Explain two** ways through which an operating system can enhance safety of users' of a computer system. (4marks)

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19) (a) Mrs. Kongoi Missing is a secretary for Cairnballoch Cars. She has been asked to prepare a letter to be sent out to customers notifying them that their vehicles are due to be booked in for a service. She has to send this letter to one hundred customers. As the customer letters contain similar information – apart from their names and date of services, she will use standard letter then insert the details specific to each customer.

(i) **Name** the word processing feature that will enable her prepare each letter for the clients very fast (½ mark)

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(ii) As she types her letter she realizes that when she reaches the end of a line, the word processor automatically moves her cursor to the next line.
Name the feature of the word processor that does this. (½ mark)

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(iii) Mrs. Missing has finished typing the letter. Print Preview shows that it is more than one page long. **State two** way in which the letter could be made to fit on one page. (2marks)

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(b) A school’s examinations officer has decided to develop a database to store Students’ details and the examinations they are due to sit in the year 2021. They are going to use a relational database. The tables are to hold information as follows:

- Students details table shall contain students’ personal information such as name
- Exam details table shall contain details of the exam such as exam date
- Student exam registration details table shall contain details of students and exams they are enrolled for.

Some of the records stored in the **Exam details** table are given below

Examination_ID	Name_of_Subject	Examination_Level	Date_of_EXAM
0201	Kiswahili	KCSE	12/04/2021
0101	English	KCSE	11/06/2021
0102	English	KCPE	01/06/2021
0202	Kiswahili	KCPE	28/06/2021

(i) Based only on the examination details above and on additional information that there are only two types of examination levels-KCSE and KCPE, **complete** the figure below, stating the most appropriate **data type** for each field.

Field Name	Data Type
Examination_ID	
Name_of_Subject	
Examination_Level	
Date_of_Exam	

Figure 1: Exam details table design

(1 mark)

(ii) **Write** the search criteria to search for all examinations which will be sat after

26/06/2018.

(1mark)

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(iii) Using a figure similar to one used in (i) **above**, design the tables that will contain **Students details** and **Student exam registration details**. (2marks)

(iv) When designing a relational, the database developer may use the illustrations shown in figure below to show the relationship between two tables. The letter **M** Stands for **Many**; it represents the **many** side of a relationship. The Number **1** represents the **one** side of a relationship. The rectangles represent tables. Tables names are labelled above the table and the field names are labelled inside the table as indicated. In this illustration **Field A** in **Table 1** is used to create a relationship between **Table 1** and **Table 2** by linking it to **Field Y** in **Table 2**. The relationship between these tables is a **one to many**.

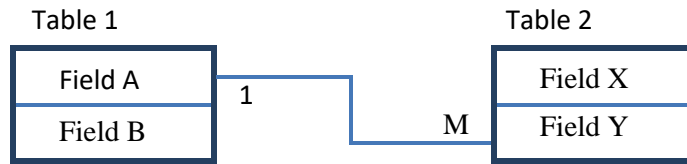


Figure 2: An illustration of a relationship between two tables in a relational database

Using the above illustrations method, show the relationship between the three tables in the school database clearly showing the fields that are used to link the tables and the relationship between the tables. (2marks)

(c) Keeprope has created a spreadsheet showing the following data.

	A	B	C	D	E	F	G	H
1				Name	Months in employment			
2				Keymoney Mbecha	31			
3				Anyone Cheptoe	33			
4				Mach Liel	39			
5				Asea Neovongo	33			
6				Vrede te Bewaren	42			
7				Maroroya na Vakacegu				
8				Hoida Rahu	38			
9				Säilytä Rauha	33			
10				Rakkaus Rauha				
11								

(i) **Write** down the formula that would be entered in cell **G2** that would display the total number of employee who have been on employment for **33** months and below. (2marks)

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(ii) **Explain** how the formula entered in cell **G2** works. (2marks)

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(iii) Keeprope subtracts the value that is displayed by the formula he entered in cell **G2** in from 9. He thinks this will tell him the number of workers who have been in employment for more than 33 months. Explain why his reasoning may not work. (2marks)

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20) (a) Give **three** reasons by computers use binary numbers to represent data. (3marks)

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21) Subtract **negative 7** from **negative 8** using twos complement. Leave you answer in base ten.) (6marks)

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22) Distinguish between the following data processing terms:

(i) Mechanical and Manual data processing modes.

(2marks)

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(ii) Sequential and Serial file organization methods.

(2marks)

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(iii) Interactive and real-time electronic data processing modes.

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