NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ INDEX NO.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SIGNATURE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ASUMBI GIRLS HIGH SCHOOL

 PRE-MOCK

MAY-JUNE

2022

**451/1**

**COMPUTER STUDIES**

**PAPER 1**

**THEORY**

**TIME: 2½ HOURS**

451/1

COMPUTER STUDIES

PAPER 1

THEORY

TIME: 2½ HOURS

**INSTRUCTIONS TO CANDIDATES:**

* Write your name and index number in the spaces provided above.
* Write the date of examination and sign in the spaces provided.
* This paper consists of **two** sections.
* Answer **all** the questions in section **A.**
* Answer question **16** (compulsory) and **any other three** questions from section **B**.
* All answers **must** be written in the spaces provided in this question paper.

**FOR EXAMINER’S USE ONLY**

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION** | **QUESTION** | **MAXIMUM SCORE** | **ACTUAL SCORE** |
| **A** | 1 – 15 | 40 |  |
| **B** | 16 | 15 |  |
|  | 15 |  |
|  | 15 |  |
|  | 15 |  |
|  |  | **TOTAL SCORE** |  |

***This paper consists of 13 printed pages***

***Candidates should check to ensure that all pages are printed as indicated and no questions are missing.***

**SECTION A (40 MARKS)**

***ANSWER ALL THE QUESTIONS FROM THIS SECTION IN THE SPACES PROVIDED***

1. One of the functions of an operating system is to control computer resources. State three resources under operating system control (3 marks)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. (a) The figure below shows the relationship between tables in a database.

Table 1

Admno

Termcode

Idno

Eng

maths

∞

1

Table3

Admno

Name

Class

Table 2

Termid

Year

∞

1

Identify two primary keys and two foreign keys used in the relationships (2 marks)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(b) Distinguish between bound and unbound controls as used in database forms (2 marks)

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1. Explain why an impact printer is suitable for printing multiple copies (2 marks)

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1. State any four examples of document readers (2 marks)

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1. (a) Define the term simulation (1 mark)

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(b)List two educational areas where simulation programs can be used (1 mark)

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1. Explain two ways of protecting data and information against unauthorized access (2 marks)

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 7. Explain two characteristics of good information (2 marks)

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1. Explain three types of errors that are likely to exist in a program (3 marks)

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 9. State two roles of a network admistrator (2 marks)

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 **10.** State three negative impacts of information communication technology on the environment (3 marks)

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11. Study the follow flowchart then answer the questions that flow.



**A**

**C**

**D**

**B**

1. Identify the type of flowchart represented by the flowchart in figure (1 mark)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Name the flowchart symbols labeled **A, B,C and D** in the flowchart**. (**2 marks)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**12.** Mary a computer student noticed that every time a person enters the computer lab, the computer screen flickered. Identify three reasons why the monitor might be flickering (3marks)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

13. (a) state the importance of column breaks as used in a word processor (1 mark)

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 **(b)** List any two line spacing specifications used in Ms- Word (1 mark)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

14. The first column in the table below contains the formula stored in cell **C10** of a spreadsheet. Enter the formula as they would appear when copied to cell **F15** of the same spreadsheet (2 marks)

|  |  |
| --- | --- |
| **FORMULA IN C10** | **FORMULA IN F15** |
| =A5\*B5 |  |
| =4\*B$6 |  |

15. (a) Differentiate between an analog and digital data signal (2 marks)

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**(b)** The government of Kenya is in the process of laying out fibre optic cables throughout the country. State three advantages of fibre optic cables (3 marks)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**SECTION B( 60 MARKS)**

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

16.(a) Draw a program flowchart that would accept and their sum. If the sum is greater than 200, it adds 30 to the sum, otherwise subtracts 20 from the sum. The program should then display the results (7 marks)

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(b) Study the pseudo code below and determine its output (3 marks)

STEP 1: T=0

 M=0

 K=1

STEP 2 M=M+T

 T=T+5

 K=K+1

STEP 3 REPEAT STEP 2 WHILE K<3

 WRITE M, T

 EXIT

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(c ) (i)List two benefits of using interviews as a method of fact finding (2 marks)

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 **(ii)** Explain three types of system change over strategies (3 marks)

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17. (a) state three functions of a database management system (DBMS) (3 marks)

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**(b)** if a database was to be created for a list, Tables, Forms, Queries and Reports are likely to be used. State the purpose of each of the objects (4 marks)

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c) The information below is maintained by Jessica Fruit store. Study it and answer the questions that follow:

|  |  |  |  |
| --- | --- | --- | --- |
| **Product number** | **Product name** | **Qty in stock (kg)** | **Value per unit (ksh)** |
| 001 | Peach | 1000 | 200 |
| 002 | Oranges | 1200 | 200 |
| 003 | Mangoes | 1300 | 100 |

Write down the query statements you can use to list the following;

i) Product names starting with letter P. (2 marks)

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ii) Value per unit below 200. (2 marks)

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| --- | --- |
| (d) | The following is a spreadsheet relating to a farmer (2 marks)A function = IF (B2<200, “Not Viable”, IF (B2>300, “Moderate”, IF (B2>1000, “Viable”))). Give the appropriate result returned in cells C2, C3, C4 and C5 |
|  |  |

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

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18. (a) Explain the use of the following commands found in the spell check dialog box in reference to word processing (3 Marks)

**i) Change \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ii) Ignore once \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**iii) Add \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**(b)** State four font styles supported by Ms. Word (2marks)

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**(c) Work out** the following binary arithmetic (2marks)

1. 11101.00112+ 101.0112

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1. **101001.101012-110.011012**

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1. Using twos complement, perform the following calculation. (4marks)

**2310 - 4110**

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1. Convert 13.12510 to decimal. (2marks)

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1. A particular computer stores numbers in a single 8-bit word. How would it

represent 0.312510? (2 marks)

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19 ( a) Explain each of the following type of operating systems (4marks)

i. Distributed

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ii. Multi-user.

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b)List any two types of embedded operating systems used in modern cell phones (2marks)
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c) Most operating systems provide a *file system*. Mention any TWO file systems used in windows environment.(2 marks)

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 (d) Define the term interactive data processing. (1mark)

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 (e) Explain why input screens are better data entry designs than entering data directly a table. (2 marks)

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(f) State two likely causes of data and program loss in a computer system? (2 marks)

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(g) Explain the meaning of the following terms as used in data security (2marks)

1. Fraud

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 b. Alteration

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20. (a) The figure below shows an extract of an e-mail application.



State what is meant by the following (3 marks)

1. Trash

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1. Spam

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1. Inbox

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

 i) Head gear

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 ii) Body suit

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c) Most computerized security systems make use of Biometric analysis, name **three** physical features of human beings that can be considered in this analysis (3marks)

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1. (i) Define the term networking topology (1mark)

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1. (ii) Distinguish between logical and physical network topologies (2marks)

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(d) Explain the functions of the following network devices (4marks)

1. Network interface card (NIC)

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 (ii) Gateway

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 (iii) Bridge

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 (iv) Repeater

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