

SCHEME

NAME..... DATE

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451/1

COMPUTER STUDIES
PAPER 1

JUNE, 2022

TIME: 2½ HOURS

MARKING SCHEME

SUKELLEMO JOINT PRE-MOCK EXAMINATION 2022

Kenya Certificate of Secondary Education.

451/1

**COMPUTER STUDIES
PAPER 1**

TIME: 2 HOURS 30 MINUTES.

Instructions to Candidates

- Write your name and Index Number in the spaces provided.
- This paper consists of two sections.
- Answer **ALL** questions in **section A**
- Answer **Question 16** and other **THREE** questions in section B.
- All answers **MUST** be written in the spaces provided on this question paper.

Section	Question	Maximum Score	Actual Score
A	1 - 15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
TOTAL		100	

SECTION A (40 MARKS)
ANSWER ALL QUESTIONS FROM THIS SECTION

1. Explain two ways in which computer can be used in the following areas. (2mks)

a) Entertainment industries

- i) Creating and playing computer games.
- ii) Record, synthesize, edit and distribute music. $2 \times \frac{1}{2} = 1$
- iii. Create animations and special effects in movies

b) Banking

- i) Processing of cheques (ii) provision of electronic money transfer.
 - ii) Preparation of payrolls (iii) keeping records of customer accounts and staff. $2 \times \frac{1}{2} = 1$
- Manage financial transactions by use of ATM to dispense and deposit money.

2. Write the following abbreviations in full. (2mks)

a) POST

Power - On - Self - Test

b) SVGA

Super Video Graphics Array

3. Suggest how in future the computer may be made user-friendly for persons who are visually challenged. (1mk)

- ✓ Use of Braille keyboard.
- ✓ Speakers and voice input devices such as microphones.

4. Explain three advantages of an inkjet printer. (3mks)

- High quality printouts are produced with options of using colour.
- Relatively faster than dot matrix printers.
- Relatively cheaper compared to laser printers.

$3 \times 1 = 3$

5. Odhiambo a computer student at Lenana High School had the following problems. (2mks)

- a) Headache
- b) Backache

Give the likely cause of the above problems and give the likely solution for each problem.

Problem	Likely cause	Problem solutions
Headache	- Using a computer for a long period of time without taking breaks ✓ 1/2	Always take frequent breaks. ✓ 1/2 ⇒
Backache	poor sitting or use of substandard furniture ✓ 1/2	- sit in an upright posture - Use standard/Adjust the furniture to your comfort. ✓ 1/2 = 2x

6. a) Highlight four factor to consider when choosing an input device. (2mks)

- ✓ Cost
 - ✓ Volume of data
 - ✓ Availability in market.
 - ✓ Compatibility with your computer
 - ✓ Type of data to be entered
 - ✓ speed
- b). State and explain two types of computer files (2 mks)

Master file - Main file that contains permanent as well as semi-permanent data.

Transaction file - Contains temporary data that is generated during processing. - Used to update master file

Sort file - Contains records arranged in a predetermined order.

Report file - Contain records generated after processing.

Reference file - Contain data that is used for look up purposes.

Back up file - Contain copies of data/information Any 2x1 =

7. Juma bought a computer with the following features.

- i. 4.0 GB primary storage
- ii. 500.0 GB SATT HDDC
- iii. Dual core processor
- iv. 19" TFT VDU

a) What do you understand by the term *dual core* computer? (1mk)

A computer whose motherboard has two processors.

8. Define a multimedia system and state two components of a multimedia system. (2mks)

Ability for a computer to process and output text, sound, video and pictures. ✓ 1mk = 1

components of a multimedia system:

✓ Speakers ✓ Sound card $2 \times \frac{1}{2} = 1$

✓ CD/DVD drive ✓ SVGA monitor

✓ Software that is able to play multimedia content.

9. a) State the type of files which have the following file extensions and give an example for each (2mks)

i. .BAT - System file - Eg Batch file used to process log files, run series of calculations.

ii. .XLS - Data file, A spreadsheet file e.g Ms. Excel worksheets.

b) List four types of proof reading tools in a word process. (2mks)

✓ Spelling and grammar checker

✓ Thesaurus

✓ Auto complete

✓ Autocorrect $4 \times \frac{1}{2} = 2$

10. a) While Wekesa is editing a workbook data item, a # *VALUE! Error* occurred. Identify the cause of such error in the affected worksheet. (1mk)

Occurs when wrong type of argument or operand is used.

$1 \times 1 = 1$.

b) Distinguish between an embedded chart and a chart sheet.

(2mks)

Embedded chart - A chart that is saved as part of the worksheet on which it is created. ✓ 1x1=1

Chart sheet - A separate sheet within the workbook that contains the chart. ✓ 1x1=1

11. State four importance of the internet to the society.

(2mks)

Electronic mail (E-mail) has enabled faster communication.

E-banking has enabled establishment of branchless banks.

It has enabled online shopping

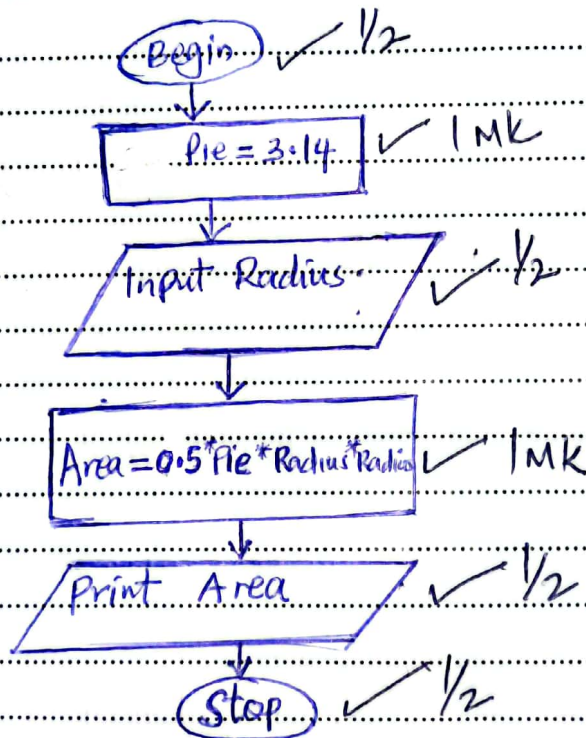
It has enabled online/distance learning

It has enabled use of social networking e.g facebook, twitter etc.

4x 1/2 = 2

* Allow any relevant answer. (4mks)

12. Draw a flowchart that can be used to find the area of a semi-circle.



4 Mks

13. Define the following terms as used in desktop publishing

(2mks)

i. Master page

A page used in designing the general layout that is to be replicated in all other pages in a publication.

ii. Gutter - Blank space between two facing pages.
 OR Extra space allowance used to accommodate the binding in books and magazines.

14. Use two complements to complete the value of Y in eight bit binary notation. (4mks)

$$96_{10} + Y_{10} = 124_{10} \Rightarrow Y_{10} = 124_{10} - 96_{10}$$

96	Rem	124	Rem.
2 48	0	2 62	0
2 24	0	2 31	0
2 12	0	2 15	1
2 6	0	2 7	1
2 3	0	2 3	1
2 1	1	2 1	1
2 0	1	2 0	1

$= 1100000_2$ $= 1111100_2$

$\Rightarrow 01111100_2 - 01100000_2$

1's C of 01100000 is 10011111 ✓
 2's C will be 10011111 + 1
 $= 10100000$ ✓
 $= 01111100$
 $+ 10100000$
 $(1)00011100_2$
 over flow bit (ignore) ✓
 $= 00011100_2$ Ans. ✓

(4mks)

15. a) Natural disaster can cause loss of data and programs. State two ways of ensuring that data and programs are not lost if a disaster strikes. (2mks)

✓ Create replicates of backups in separate and remote environment.

✓

b) State two advantages of using robots in industries. (2mks)

- ✓ They are fast in performing tasks
- ✓ They do not get bored of doing the same task
- ✓ They can do tasks that are hazardous for human be
- ✓ They produce high quality products.

Any 2x1 = 2

Section B (60 marks)

Answer Question 16 and any other three from this section.

16. a) State **three** functions of an assembler.

(3mks)

- ✓ Converts symbolic operations code (mnemonic) to an object code.
- ✓ Allocates space in memory for the object code.
- ✓ Identify errors and produce a list of all errors detected.
- ✓ produces a list of the source code and the object code.
- ✓ Links the object code to the existing code libraries. (3x1) = 3

b) Highlight **three** characteristics of a good flowchart.

(3mks)

- Must have clear one starting point and one end point.
- Must flow in a logical order
- Must use the correct symbols
- Should have short, clear and readable statements written inside the symbols.

Any 3x1 = 3

c) Give **two** examples of a **web scripting** languages.

(2mks)

- ✓ HTML
- ✓ XML
- ✓ Coldfusion
- ✓ JavaScript
- ✓ perl
- ✓ Applescript
- ✓ VBScript
- ✓ python
- ✓ PHP

Any (2x1) = 2

- d) Nekta company give a discount of 16% for purchase worth sh. 10,000 and above; 10% for purchase worth between sh. 5000 and 10,000 and none for purchase worth sh. 5,000 and below. Write a pseudo code for a program that would accept the value of a purchase, compute the discount, then display the new amount to be paid by a customer. (7mks)

Start

set x as the value of purchase
set d as the discount
set y as the new amount to be paid.

Input x

If $x \geq 10,000$ Then

$$d = 0.16 * x$$

$$y = x - d$$

Else If $x > 5000$ Then

$$d = 0.10 * x$$

$$y = x - d$$

ELSE

$$y = x$$

End If

End IF

Print y

7 Marks

Stop

NOTE: Accept any correct pseudocode.

17. a) What is meant by each of the following terms as used in data security and controls. (2mks)

i. Confidentiality

- Sensitive data or information belonging to an organization or government should not be accessed by or disclosed to unauthorized people.

ii. Threats

- Circumstances that have the potential to cause loss or harm.

b) Jane a form four student was advised to partition a hard disk for her computer. Explain two reasons that may have necessitated this. (4mks)

✓ IF she wants to install two operating systems in one computer.

✓ To use one of the portion (drive) for Backup purposes.

) If one table in a database contains the fields: **EMPLOYEE - ID**, **LAST - NAME**, **FIRST - NAME** and **HIRE - DATE** and another contains the fields **DEPARTMENT**, **EMPLOYEE - ID** and **SALARY**, it is possible to establish a relationship between the two tables.

i. Name the type of such a database. (1mk)

Relational database

ii. What type of relationship can be established between the tables? (1mk)

One-to-One

iii. Provide the most appropriate data types for each of the fields. (3mks)

EMPLOYEE_ID - Text

LAST-NAME - text

FIRST-NAME - text

HIRE-DATE - Date/Time

DEPARTMENT - Text

SALARY - Currency

d) A publishing firm designed the following publication using a DTP software.

SALE!! SALE!! SALE!!

COMPUTER SALES



10% OFF

All at 10% off

Welcome to the exciting sale of:

- ✓ Laptops
- ✓ Desktops
- ✓ CD & DVD

i. Give two reasons why the firm prefer using DTP instead of Word Processors. (2mks)

- ✓ DTP provide wide range of templates.
- ✓ Master pages are used to set common layout
- ✓ Every item on a page is contained in a frame and can be edited and formatted independently.

Any 2x1=2

ii. Identify four formatting features used in the designing the publication. (2mks)

- Bolding
- Underline
- Italicising
- Drop cap
- Bullets
- Font (style, size and type)

Any 4x $\frac{1}{2}$ =2

Accept any correct formatting feature which can be identified in publication above.

18.a) i) Give any TWO ways of representing a negative number in computer system. (2 marks)

Sign bit
 Ones Complement
 Twos Complement

Any $2 \times 1 = 2$

ii) The following eight-bit pattern represents the two's complement of an integer: 110001001. What is the decimal equivalent? (2 marks)

its 1's complement is 001110110 ✓ 1/2
 its 2's complement is 001110111 ✓ 1/2

119₁₀ ANS. ✓ (1)

2MKS

iii) Subtract the binary number 0011001 from 10110010. (2 marks)

$$\begin{array}{r} 10110010 \\ - 0011001 \\ \hline 10011001_2 \end{array}$$

✓

2MKS

b) Describe the following types of errors in data processing, giving examples. (3mks)

(i) Truncated
 Shortening or cutting off part of a number or a word.