Name:……………….………………… Index Number :…………..…....…………

Adm No. …………..…………   Class …….………………………………

451/1
COMPUTER STUDIES
Paper 1
THEORY
DECEMBER 2021
Time: 2 ½ Hours

BUNAMFAN CLUSTER EXAMINATION 2021

Kenya Certificate of Secondary Education (K.C.S.E)
451/1
COMPUTER STUDIES
Paper 1
THEORY
DECEMBER 2021
Time: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

- Answer **ALL** the questions in **section A**
- Answer **question 16 (compulsory)** and **ANY OTHER THREE questions** from **section B.**

For Official Use Only

Question	Maximum score	Actual score
1-16		
17		
18		
19		
20		
TOTAL SCORE		

This paper consists of 14 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)

Answer **ALL** *questions in the spaces provided*

1. i) Explain the *emerging trends* in microcomputer technology in relation to Size   (1 mark)

………

………

ii) Mention *two* Analogue devices   (2 marks)

………

………

………

………

2. i) Identify and briefly describe **three** advantages of using computers in banking   (1½ marks)

………

………

………

………

………

ii) State **two** advantages of using a mouse instead of a keyboard.   (1 mark)

………

………

………

3. State **two** reasons why Magnetic tapes are not commonly used as computer data storage medium
   today   (1 mark)

………

………

………

………..

4. i) Give **two** advantages of the higher number of pixels per square centimeter.   (1 mark)

……

……

……

……

ii) Differentiate between *Data interface cable* and *power cable.*   (1 mark)

……

……

……

iii) Explain **two** differences between *serial* and *parallel* communication ports of a computer .
          (2 marks)

……

……

……

……

……

……

5. i) What is *line spacing* as used in word processing?   (½ mark)

……

……

……

ii) Describe any **two** line spacing specification used in Microsoft Word.   (1 mark)

……

……

……

……

3

iii) Name the *two* documents used in mail merge.   (1 mark)

………

………

………

iv). With reference to the concept of graphics as used in Microsoft word. Explain the *difference*
between object linking and embedding?   (1 mark)

………

………

………

6. Who am I?   (3 marks)

i) Am is skilled in software/program development as per requirement and technical operations of
computer hardware. I also develop and update both system and application software together with
the associated documentations.

………

ii) Am is skilled in designing computer hardware and also improves on existing ones.

………

iii) I maintain, update & modify information on the websites to meet new demands by the users. I
also monitor the access & use of internet connection by enforcing security measures

………

7. During the COVID 19 pandemic, the government advised the citizens to use electronic funds
transfer and other popular mobile phone money transactions to make payments.
i) State *how* the above method of conducting business would help to curb on the spread of the
disease.   (2 marks)
………

………

………

ii) What is the meaning of *Electronic Funds Transfer*?   (1mk)
………

………

4

………

8. Define the term *dual booting* as used in computing.   (1 mark)

………

………

9. Differentiate between *cropping* and *grouping*.   (2 marks)

………

………

………

10. Other than flow chart, state **two** tools that can be used to present an algorithm .   (2 marks)

………

………

………

11. Differentiate between a *deadlock* and *interrupt* as used in operating system.   (2 marks)

………

………

12. (a) Securem is a company that deals with providing security services to its clients. Name any **two**
    ways the company can protect its computer network from hackers.   (2 marks)

………

………

………

    (b) State **three** characteristics of a suitable password.   (3 marks)

………

………

………

………

5

13. During system development the system analyst should consider the correct requirement specifications for the new system. State any **four** outcomes that may result from using incorrect requirement specifications.   (3 marks)

……

……

……

……

……

14. (a) Define the term *Computer Aided Design*.   (1 mark)

……

……

……

   (b) List **two** advantages of using Computer Aided Design.   (2 marks)

……

……

……

15. Explain **two** arithmetic errors that may occur during computerised data processing.   (2 marks)

……

……

……

……

SECTION B (60 marks)

Answer q**uestion 16** and **ANY OTHER THREE** questions from this section in the spaces provided.

16. (a) Give **two** examples of syntax errors in programming.   (2 marks)

……

……

……

(b)Scrabble^{TM} is a word game where the players are awarded points by creating words from a combination of letters each of which carry a different point value. A player is awarded the points for creating words from the combination. Write a ***pseudocode using CASE*** to read a letter and output the value equivalent to that letter from the following table.   (8 marks)

LETTER	VALUE
A,E,I,L,N,O,R,S,T,U	1
D,G	2
B,C,M,P	3
F,H,V,W,Y	4
K	5
J,X	8
Z,Q	10

7

(c) Classify the following programming languages according to their category: (3 marks)

Programming language	Category
HTML	
JAVA	
JAVASCRIPT	
PASCAL	
VISUAL BASIC	
LISP	

(d) With aid of a diagram, explain the "Repeat Until" construct as used in structured programming

(2 marks)

17. (a) State the **stage** in system development life cycle where each of the following activities are carried out:

i. Identifying shortcomings of a system.   (1 mark)

………………………………………………………………………………………………………

ii. Preparing the system migration plan   (1 mark)

………………………………………………………………………………………………………

iii. Identifying the technologies that may be used in the proposed system.   (1 mark)

………………………………………………………………………………………………………

(b) State **three** roles of a programmer in system development life cycle.   (3 marks)

……

……

……

(c) E-mail technology has become a very important part of today's communication. Explain any **three** problems associated with using e-mail technology for communication.   (6 marks)

……

……

……

……

……

……

(d) Sarafina wants to download her favourite movie from YouTube. State any three factors that may determine how long it will take her to complete the download.   (3 marks)

……

……

……

……

……

18. The following Digital Club Member details were to be entered in a database: Name, Date of registration, Registration fee and Class.

(a)   Prepare a suitable structure showing field names and their field types   (4 marks)

Field	Data type
Name	Text
Date of registration	Date
Registration fee	Currency or Number
Class	Text

(b)   Name one other field that the Club Patron may need to add to uniquely identify the records

(1 mark)

……

(c) Write the statement that can be used to select members of the class form 3.   (2 marks)

	Name	Date of registration	Registration fee	Class
Criteria/ Expression				

(d) The following is an extract from a spreadsheet created to manage sales. Use it to answer the questions that follow.

	A	B	C	D
1	ITEM NAME	UNIT PRICE	UNITS SOLD	
2	HDD 300 GB	7,500	2	
3	Optical Drive	4,500	8	
4	DELL Latitude core i5	44,500	3	
5	DDR4 8GB RAM	10,000	4	
6	Lenovo Yoga Smart Tab	28,953	1	

(i) Write a formula that will compute the number of items whose unit price whose price more than 10,000   (3 marks)

……

……

(ii) If the formula =$B2*C$2 was placed in D2, state the output if copied to D3.   (2 marks)

……

……

(iii) Write the cell referencing used in c(ii) above.   (1 mark)

……

……

10

(iv) Write the data type that is stored in cell C5 and A6 respectively   (2 marks)

………

………

19. a) Define the term attenuation as used in networking and data communication.   (1 mark)

………

………

………

   b) The following are figures of networking cables. Identify each.   (2 marks)

Figure 1   Figure 3
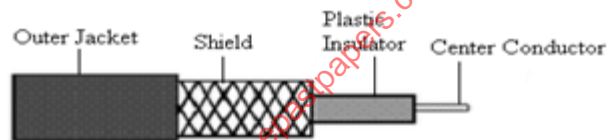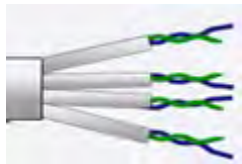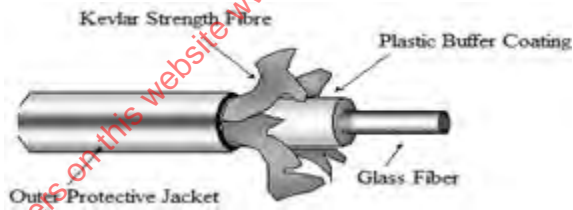

Figure 2   **Figure 4**

Figure 1   **Figure 2**

 Figure 3   **Figure 4**

----

c) (i) Give **two** examples of network software   (2 marks)

………

………

………

11

(ii) In a network setup, list any **two** items that may be referred to as data terminal equipment.

(2 marks)

………

………

………

d) Explain the following terms as used in networking   (4 marks)

  (i) Remote Communication

………

………

………

  (ii) Distributed processing

………

………

………

e) State **four** functions of a server in a network   (4 marks)

………

………

………

………

………

………

………

20. (a) Determine the binary equivalent of the octal number 253243.   (2 marks)

……

……

……

(b) Carry out the following binary arithmetic using *ones complement*. In each case leave your answer in
base 10.

    (i) $10_{10} - 10_8$ (5 marks)

……

……

……

……

……

……

……

……

……

……

……

……

……

(i)   2BH-9H   (6 marks)

……

……

……

……

……

……

……

……

……

(c) Arrange the following numbers in ascending order.   (2 marks)

10_{16}, 10_{10}, 15_8, 1011_2

……

……

……

THIS IS THE LAST PRINTED PAGE