

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)

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

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

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

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

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

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

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

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

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

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

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

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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.

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

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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

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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)

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

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

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

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

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

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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)

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

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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)

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

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

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

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**SECTION B (60 marks)**

Answer **question 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)

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(b)Scrabble™ 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

(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)

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ii. Preparing the system migration plan (1 mark)

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

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

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(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)

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(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)

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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)

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- (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)

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

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

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

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

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



Figure 1

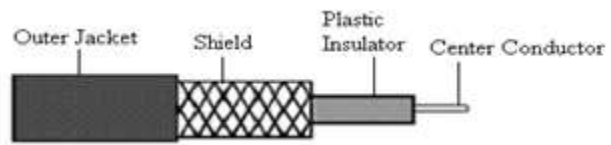


Figure 3

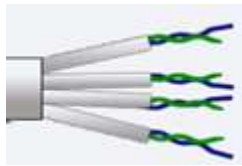


Figure 2

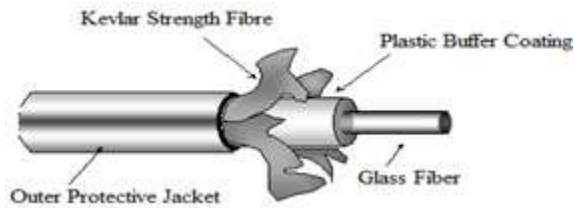


Figure 4

Figure 1

Figure 2

Figure 3

Figure 4

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

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

(2 marks)

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d) Explain the following terms as used in networking

(4 marks)

(i) Remote Communication

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(ii) Distributed processing

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e) State **four** functions of a server in a network

(4 marks)

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

(2 marks)

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(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)

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(i) 2BH-9H

(6 marks)

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(c) Arrange the following numbers in ascending order.

(2 marks)

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

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**\*THIS IS THE LAST PRINTED PAGE\***