**BUNAMFAN CLUSTER EXAMINATION - 2022**

**Kenya Certificate of Secondary Education**

**451/1– COMPUTER STUDIES – Paper 1**

**June 2022 - 2 ½ hours**

**Name**…………………………………**Adm No**……

**Class**…………… **Date**……………………………

***Instructions to Candidates***

a) *Write your name and admission number in the spaces provided at the top of this page.*

b) *Sign and write the date of examination in the spaces provided above.*

c) *This paper consists of* ***TWO*** *sections;* ***A*** *and* ***B.***

d) *Answer* ***ALL*** *questions in section* ***A.***

e) *Answer question* ***16*** *and any other* ***THREE*** *questions from section* ***B.***

f) *All answers should be written in the spaces provided on the question paper.*

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

h) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing***

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| --- | --- | --- |
| ***SECTION*** | ***QUESTION*** | ***SCORE*** |
| ***A*** | ***1 - 15*** |  |
| ***B*** | ***16*** |  |
|  |  |
|  |  |
|  |  |
| ***TOTAL*** |  |

*This paper consists of 13 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing*

**SECTION A** (40 marks)

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

1) Describe the following **input/output** terms as used in computer systems. Give an example for each (3marks)

a) Read

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b) Write

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## 2) Using relevant examples distinguish between a formula and function. (3marks)

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3) A publisher intends to use a desktop publishing programme to create a publication which is to have many graphics. State three ways in which the graphics may be acquired for this purpose. (3 marks)

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4. The management of an organisation intends to purchase a printer. State three factors that they should consider during the purchase (3 marks)

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## 5. State three reasons why it is important to define data types of fields in a database correctly. (3 marks)

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6. An engineering company requires a computer system to design roads and bridges. (2 marks)

Explain one suitable choice for:

(i) output device;

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(ii) software. ​

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**7.** State three circumstances under which the use of wireless communication would be preferred in data communication. (3 marks)

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8. Headache, back and neck pain may result from the use of computers. State how each of them can be minimized (2 marks)

(a)Headache

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(b) Back & Neck Pain

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9. Explain the importance of each of the following in word processing:

(i) tab stops; (2 marks)

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(ii) Section breaks. (2 marks)

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10. State three problems associated with using e-mail technology for communication (3 marks)

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11. State two ways in which each of the following can be prevented

(a) Software errors (1 mark)

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(b) Computer fraud (1 mark)

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12. Differentiate between analogue data and digital data as used in computers (2 marks)

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13. State four properties that an operating system displays about a file (2 marks)

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14. State the functions of each of the following keys on the computer keyboard (2 marks)

(a) backspace;

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(b) insert (ins)

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15. Give three file organization methods in a computer (3 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) State three ways in which a programmer can make program code easy to fol1ow (3 marks)

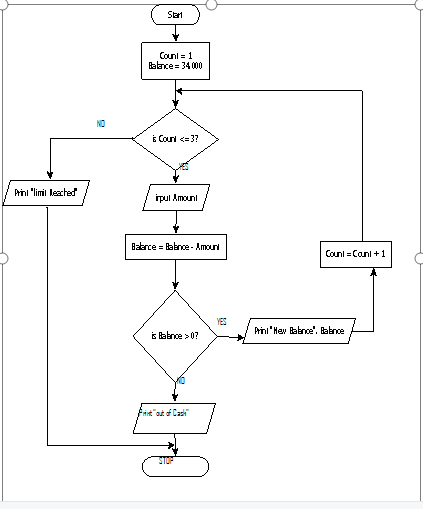
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(b) Study the flowchart below and use it to answer the questions that follows;



(i) State the output of the above program flowchart for the inputs given below (3 Marks)

Amount = 15,000, 14,000 and 23,000 respectively

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(ii) State the purpose of the flowchart (1 Mark)

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(iii) Write a pseudocode for the flowchart in question (16. c) above (8 Marks)

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17. (a) Interpret each of the following spreadsheet formula:

​(i) = countif(A2:A9, “>=E7”) (2 marks)

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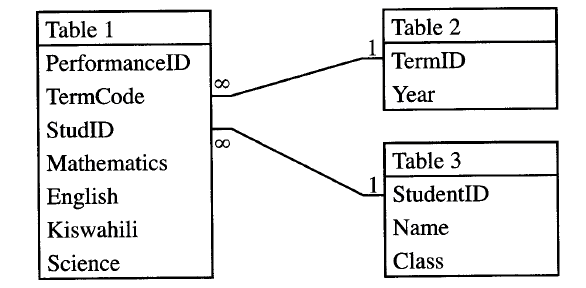
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​(ii) =sumif(B2 :B10, “WP”, D3 :D11) (2 marks)

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## (b) The figure below shows relationships between tables in a database.

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Identify two primary and two foreign keys used in the relationship. (4 marks)

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…………………………………………………………………………………………………………………….(c)(i) Convert the hexadecimal number C7D16 to its equivalent decimal number (2 Marks)

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(ii) Using the twos compliment and 8-bit notation subtract 27 from 12 leaving your answer in binary notation (5 Marks)

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18. (a) Explain three circumstances under which observation method may be preferred during data

collection (6 marks)

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(b) Describe each of the following types of maintenance

(i) Perfective; (2 marks)

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(ii) Corrective; (2 marks)

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(iii) Adaptive. (2 marks)

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(c) Name three approaches that may be used to replace an old system with a new computerized system (3 marks)

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19. (a) With the aid of a diagram, describe the time sharing mode in computer data processing (5 marks)

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(b) A company’s management has opted to use computers to process data. State four factors that the management needs to consider when selecting the company data processing mode. (4 marks)

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(c) Describe each of the following validation checks as used in data processing

(i) Preserve check (2 marks)

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(ii) Data type check (2 marks)

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(iii) Check digit (2 marks)

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20. (a)State the function of each of the following

## (a) Network Interface Card (1 mark)

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## (b) Modem (1 mark)

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(c) Repeater (1 mark)

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(d) Crimping tool (1 mark)

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(b) State any two reasons why the fibre optic cable is preferred for data transmission over the other cables (2 marks)

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## (c) State three functions of networking operating systems other than providing network security. (3 marks)

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(d) A company has three branches X, Y and Z where X is the headquarter. The local area network (LAN) at X is directly connected to the LAN at Y and directly to the LAN at Z. Explain two benefits of having the LAN at Y also directly connected to the LAN at Z. (4 marks)

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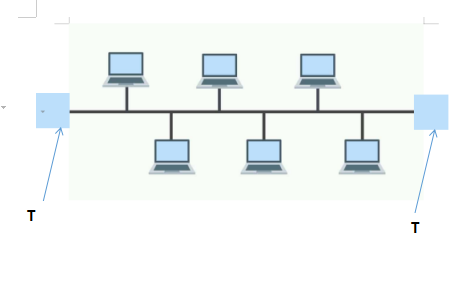
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(e) The figure below shows a network topology . use it to answer the questions that follows:



(i) What is the name of the topology? (1 mark)

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(ii) What is the work of the part labelled T. (1 mark)

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