KCSE TRIAL 2020
COMPUTER PAPER 1

SECTION A [40 MARKS]

*Answer **all** questions in this section*

1. Outline **three** distinctions between a super computer and microcomputer.   [3 marks]
_____
_____
_____
_____

2. State four features of fifth generation computers.   [4 marks]
_____
_____
_____
_____

3.(a). Explain **two** uses of forms in database design.   [2 mark]
_____
_____
_____
_____

(b). i). Define the term control as used in report and form design.   (1 mark)
_____
_____

(ii). Explain briefly the difference between bound and unbound controls.   (2marks)
_____
_____
_____
_____

4. State any **two** differences between function keys and special keys of a keyboard. [2 marks]
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_____
_____
_____

5. In system development, testing is one of the critical stages. Give **three** reasons why the testing phase is critical to the systems developer.   [3 marks]

_____
_____
_____
_____

6. Write the following abbreviations in full. [3 marks]
i). BCD

ii). ASCII

iii). EBCDIC

7. State **two** properties that an operating system display about a file. [1 mark]
_____
_____

8. Differentiate between Computer Aided Design CAD and Computer Aided Manufacture (CAM). [4 marks]
_____
_____
_____
_____

9. (a). Distinguish between a primary key and index key as used in databases. [2 marks]
_____
_____
_____

(b). Explain the relevance of foreign key in a database entity. (1 mark)
_____
_____

10. List **three** differences between laser printer and a dot matrix printer. [3 marks]
_____
_____
_____

11. Name an input or output device used in the following tasks. (2 mark)

a). Capturing still images
_____

(b). Printing detailed architectural designs
_____

(c). Playing flight and driving games
_____

(d). Capture data at ATM

12. What is the use of the search and replace feature in a word-processor.   (1 mark)
_____
_____

13. State two ways in which a computer may be used in efficient running of a hospital. (2 marks)
_____
_____

14. The formula = $A4*C$3 was entered in cell D4. What will be the formula if it is copied to cell F10.   [1 marks]
_____
_____
_____

15. Name any three methods that can be used to test a program of errors.   (3 marks)
_____
_____
_____

SECTION B [60 MARKS

__Answer question 16 and any other three questions from this section.__

16.[a]. Design a flowchart for a simple program that can be used to categorize people according to age. If the person is above or equal 18 years, output "Adult" otherwise output "Young".
                                                                        (8 marks)

(b). What is the difference between looping and selection? (2 marks)
_____
_____
_____
_____

[c]. Name the stage of program development cycle when: [2 marks]
(i). A user guide would be written
_____

(ii). A programmer dry-turn the code
_____

(iii). System charts would be drawn
_____

(iv). Staff training is done
_____

(d). State the three translators used in programming. (3 marks)
_____

_____

_____

_____

17.(a). Define the term data communication. (1 mark)
_____

_____

(b). Explain the following terms as used in data communication. (2 marks)
(i). Bandwidth
_____

_____

(ii). Attenuation
_____

_____

(c). Explain the following three types of computer networks. (3 marks)

i). LAN
_____

_____

_____

ii). MAN

_____

_____

iii). WAN

_____

_____

(d).i). What are robots?   (1 marks)

_____

_____

(ii). Outline any four advantages of using robots in industries over human beings. (2 marks)

_____

_____

_____

_____

(e). Describe the following communication modes giving an example in each case. (6 marks)
(i). Simplex

_____

_____

(ii). Half duplex

_____

_____

(iii). Full duplex

_____

_____

18. [a].List two characteristics of good information.   [2 marks]
._____

_____

(b(i). What is a database management system?   [1 mark]

_____

_____

(ii). State and explain three database models.   (3 marks)

_____

_____

c). Describe the following types of files.
(i). Master file   (2 marks)

_____

_____

(ii). Backup file   (2 marks)

_____

_____

(iii). Transaction file   (2 marks)

_____
_____

d). Explain the file organization methods given below.
(i). Serial   (1 mark)

_____
(ii). Indexed sequential   (1 mark)

_____
(iii). Random   (1 mark)

_____

19. (a). A shopkeeper of a small shop at Longisa has bought desktop computer to assist him in performing his business activities. He has been advised that before he can use it to work he has to install it with an operating system. State any six factors to consider when choosing the operating system.   [6 marks]

_____
_____
_____
_____
_____
_____

b). With reference to disk management explain what is meant by the terms below.
i). Formatting   (1 mark)

_____
_____
_____
ii). Defragmentation   (1 mark)

_____
_____
_____
iii). Disk partitioning   (1 mark)

_____
_____
_____

c). Give any two reasons that may make the shopkeeper to partition the computer disk. [2 marks]

_____
_____
_____

(d). The shopkeeper one day switched on the computer and experienced a number of problems with windows operating system that he had installed. The problems included failure to load the operating system during the booting. After several trials of switching on the computer, it hangs

so often alongside abnormal restarting. State any four possible causes for the computer's behaviour. (4 marks)

_____
_____
_____
_____
_____
_____

20. (a) Describe the octal number system. (2 marks)

_____
_____

(b). Convert each of the following to the number system indicated:
i). 111.101_2 to decimal; (3 marks)

_____
_____
_____

(ii). 14.6875_{10} to binary [4 marks]

_____
_____
_____

(c). Convert the number -17_{10} into 8-bit:
(i). signed magnitude representation; (2 marks)

_____
_____

(ii). two's complement (2 marks)

_____
_____

(d). Perform the arithmetic operation. (2 marks)
$110.11_2 + 11.011_2$