

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]

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)

$$110.11_2 + 11.011_2$$