

KCSE TRIAL 2021

COMPUTER STUDIES PAPER 1

SECTION A

Answer All questions in this section

1. Suggest **two** disadvantages of a notebook computer when compared with a desktop computer. (2 marks)

2. (a) What is a software suite? (1 mark)

- (b) Suggest **two** advantages of using a software suite. (2 marks)

3. (a) Explain the two major types of software. (2 marks)

- (b) Give an example of each of the above (2 Marks)

4. (a) Explain the term Process Control. (1 Mark)

- (b) State two areas where process control is used in industry (2 Marks)

5. (a) Give **one** advantage of serial connection over parallel connection. (1 mark)

(b) Give **one** advantage of parallel connection over serial connection. (1 mark)

6. (a) Explain the term pipelining as used in CPU (1 mark)

(b) Explain How parallel processing work (1 mark)

7. Give **two** advantages and **two** disadvantages of display devices (e.g., monitors). (4 marks)

Advantages:

Disadvantages:

8. (a) Explain briefly why increasing the main memory may improve the performance (e.g., speed) of a computer system. (1 mark)

(b) Explain the term memory address as used in primary memory (1 mark)

9. Explain the following as used in word processing (3 Marks)

i. Spell-check

ii. Thesaurus

iii. Macros:

10. Explain the following spreadsheet concepts:

i. Automatic Recalculation. (1 mark)

ii. What if analysis (1 mark)

11. Suggest **two** advantages of using presentation graphics software over the traditional chalk-and-talk approach in a school environment (2 marks)

12. (a) Explain the term workstation as used in a networked environment (1 mark)

(b)What is a server? (1 mark)

13. (a)Explain briefly **identification** and **authentication** in computer access control. (2 marks)

(b)What is a personal identification number (PIN)? (1 mark)

14. (a) Explain the term ergonomics. (1 mark)

(b) Suggest **two** possible causes of eyestrain due to prolonged use of computers. (2 marks)

15. State **Three** benefits of telecommuting. (3 marks)

SECTION B

Answer question 16 (compulsory) and any other three questions from this section

16. (a)(i) State and describe three types of error can occur in programming: (3 Marks)

(ii) When is a programming language considered structured? (2 marks)

(b)(i) The Global Science Museum is not large and can become over-crowded when more than 300 people are in the building. They would like a program that will stop visitors from entering when more than 300 visitors are in the building.

Design a Pseudocode segment for this problem using a REPEAT loop. You do not have to worry about visitors who leave the building, just those who have entered. (3 Marks)

(ii) Identify **Three** aspects of a good HCI? . (3 Marks)

(c)(i) Give **one** advantage of compilers over interpreters (1 mark)

(ii) Give **one** advantage of interpreters over compilers (1 mark)

(iii) Explain briefly why the source codes must be translated again if the programmer wants to use the program on a computer with a different platform. (1 mark)

(iv). Explain why a programmer may prefer to write code for device drivers using low level languages. (1 Mark)

17. (a) (i) With the aid of examples, explain number complements in the Binary number systems (2 marks)

(ii) Outline the benefits of using binary number complementation in computers. (2 marks)

(b) (i) Why is binary number system best suited for use in computers? (2 marks)

(ii) Convert the following base two number into base ten. (2 marks)

11.01

(iii) Convert the following base sixteen number into base two. (2 marks)

DEF=

(c) Carry out the following binary arithmetic:

(i) $11 + 10$ (1 mark)

(ii) 101 X 11 (1 mark)

(iii) $101/11$ (1 mark)

(iv) 101 – 11 (1 mark)
18. Describe briefly the three data processing modes (3 marks)

i. *Batching Processing Mode*

ii. *Real-time Processing Mode*

iii. *Interactive Processing Mode*

(b)(i) Suggest **two** possible reasons for data preparation errors. (2 marks)

(ii) Suggest **two** possible reasons for data input errors. (2 marks)

(c) (i) Distinguish between **data validation** and **data verification**. (1 mark)

(ii) Give **two** examples of data verification techniques. (2 marks)

(d) Describe briefly the following data validation techniques

i. Presence Check (1 mark)

ii. Type Check (1 mark)

Range Check (1 mark)

iii. Control Total Check (1 mark)

iv. Parity Checks (1 mark)

19. (a) (i) Explain the term search engine (1 mark)

(ii) Peter and Mary use the same keyword to search for information. Suggest **two** reasons why their search results are different. (2 marks)

(iii) State **one** disadvantage of using an e-mail account provided by the Internet service provider (ISP). (1 mark)

(b) (i) Explain the term URL (1 mark)

(ii) For the URL **http://www.csklsc.net/pe/calendar.htm**,
http stands for (1 mark)

The domain name is (1 mark)

The top-level domain (TLD) is (1 mark)

pe stands for (1 mark)

(c) (i) Explain the term communication protocol (1 mark)

(ii) Explain the following types of communication protocol
Ethernet (1 mark)

Token Ring (1 mark)

TCP/IP (1 mark)

(iii) Give **Two** examples of wireless-based communications channels. (2 marks)

20. (a). Describe the role of the systems analyst. (2 Marks)

(b). Describe Two techniques used by the systems analyst in requirements elicitation. (2 Marks)

(c) What is a requirements specification and what does it contain? (5 Marks)

(d) Software development is often said to be an *iterative process*. Describe Two events that might spark an iterative process in software development. (2 Marks)

(e) (i) Describe briefly the **three** basic e-commerce models. (3 Marks)

(ii) Apart from parental control, state **one** other ways of Internet censorship. (1 mark)
