

MANGU MOCK TRIAL 3

COMPUTER STUDIES

451/1

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- Write your name and Admission number in the spaces provided above
- This paper consists of **two** sections A and B.
- Answer **ALL** questions in section A.
- Answer question **11** and any other **THREE** questions from section B.
- All answers should be written in the spaces provided on the question paper.

For Examiners Use Only

Section	Questions	Candidates Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
TOTAL SCORE		

SECTION A

Answer All questions in this section

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

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

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

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

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

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

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

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

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

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

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

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

Advantages:

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Disadvantages:

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

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

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9. Explain the following as used in word processing

(3 Marks)

i. Spell-check

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ii. Thesaurus

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iii. Macros:

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10. Explain the following spreadsheet concepts:

i. Automatic Recalculation.

(1 mark)

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ii. What if analysis

(1 mark)

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

(2 marks)

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

(1 mark)

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(b) What is a server?

(1 mark)

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

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

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

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

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

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SECTION B

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

16. (a)(i) State and describe three types of error that 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) 101×11 **(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)**

iii. Range Check **(1 mark)**

- iv. Control Total Check (1 mark)
- v. 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 Mks)
- (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 Mks)
- (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)