

THE SUCCESS PATH MOCK EXAMINATIONS COUNCIL

Paving the Way to Kenya Certificate of Secondary Education Success

451/1 - COMPUTER STUDIES - FORM 3

(Theory)

END TERM 1, 2025

Time: 2½ hours



Name: **Admission Number:**

School: **Candidate Signature:**

Date:

Instruction to Candidates.

- (a) Write your Name and admission Number in the spaces provided at the top of this paper.
- (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 the 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 16 printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only.

Section	Question	Maximum Score	Candidate's score
A	1 – 15	40	
B	16	15	
		15	
		15	
		15	
Total Score		100	



SECTION A (40 MARKS)

*Answer **all** the Questions in the spaces provided*

1. Define the following terms as used in Computer studies:

(i) Nibble.

(1mark)

(ii) Word.

(1mark)

2. State the difference between Batch and real time processing then give an example in each case.

(3marks)

3. Mr. Oketch games teacher at Mama Ngina Girls High School wants to invite several schools for the hockey tournament. He was advised to use mail merging technique to create invitation letters for the respective schools identified. State three benefits of this technique.

(3marks)



4. The final activity in data processing cycle is producing the desired output. Mention **three** ways of disseminating the desired output. **(3marks)**

5. Convert AAFH to Octal number system. **(2marks)**

6. A company has decided to computerize their operations. They have decided to purchase packages standard software instead of developing their own programs. Give **three** advantages of standard software. **(3marks)**

7. A computer student from Bidii School defined multitasking as a concept where computer process more than one tasks at the same time. Agree or disagree with this student and support your answer. **(2marks)**

8. $0110_2 + x_2 = 1010_2$ Find the value of x in base 10 and 16. **(4marks)**

9. State the functions of the following disk management operation.

(i) Partitioning.

(1mark)



(ii) Disk defragmentation.

(1mark)

10. List **two** limitation of low-level programming languages.

(3marks)

11. Demonstrate three ways in which -21_{10} can be represented in a binary form.

(3marks)

12. Describe the concept of binary search method as used in sequential file organization.

(2marks)

13. Mention **three** advantages of electronic data processing.

(3marks)



14. Kinuthia has a new laser printer to print letters for his business. Kinuthia connects his printer to his computer using the USB port. Give **three** benefits of using the USB port to connect the printer to the computer. **(3marks)**

15. State **two** ways of resolving windows related problem like missing operating system. **(2marks)**



SECTION B: (60 MARKS)

*Answer question **16** and any other **three** questions from this section in the spaces provided.*

16.

(a) With the aid of a diagram differentiate between analog and digital data.

(6marks)

(b) Define the following terms

(i) Amplitude

(1mark)

(ii) Frequency

(1mark)

(iii) Periodic time

(1mark)

(c) Distinguish between

(i) Byte and nibble

(2marks)



(ii) Word and length

(2marks)

(d) Explain the role of modem in communication.

(2marks)

17.

(a) The binary pattern 110100010101 can be interpreted in more than one way.

(i) State the hexadecimal equivalent.

(2marks)

(ii) State the denary equivalent if it represents two complements of a binary number.

(2marks)

(b) Convert 214.625_{10} to binary.

(3marks)

(c) Use twos complement to subtract 20_{10} from 10_{10} and write your answer in decimal notation.

(4marks)



(d) Evaluate $1010011_2 + 10010_2 - 01010_2$.

(2marks)

(e) State **two** difference between Ones and Twos complements.

(2marks)

18. A database was used to keep results for a class of students. Part of the database is shown below in Table called MARKS.

Name	School Number	Math	English	Science	History	Geography
Paul	017	70	55	65	62	59
Ravi	0009	29	34	38	41	44
Chin	0010	43	47	50	45	52
John	0013	37	67	21	28	35
Diana	001	92	88	95	89	78
Rosanna	0016	21	13	11	27	15

(a) Mention the most appropriate data type for field Class ID.

(2mark)

(b) State the number of records in the table above.

(2mark)

(c) Identify the key field to be used in the table.

(2marks)



(a) Give a reason for choosing the field in c above. **(2marks)**

(b) Suggest how you can set an input mask for the name field such that data entered in the field is automatically change to title case. **(2marks)**

(c) Show how the dynaset will appear if the following parameters are set as shown in the query extract below. **(3marks)**

Field Name	Name	History	Geography	Science	Math
Table	MARKS	MARKS	MARKS	MARKS	MARKS
Sort					
Show	√	√	√		
Criteria		>60			
Or			>60		

(d) Write an expression that when typed at the builder will compute total marks per subject for the students. **(2marks)**



19.

(a) Study the worksheet below then answer the questions that follows:

	A	B	C	D	E	F	G
1	Item code	Type	Qty	Price	Total		
2	001	Sugar	3	100	300		
3	002	Tea Leaves	5	50	250		
4	003	Salt	4	20	80		
5	004	Rice	2	80	160		
6	005	Book	10	20	200		
7							
8							
9							
10				10%			
11							

(i) Write a formula at cell E2 to calculate Total amount for sugar. **(1mark)**

(ii) The formula =Countif (c2:c6 >=5) was placed at cell C7, what will be the result.

(1mark)

(iii) Prices for all items are to be increased by 10%, write a function at cell F2 to show the new price increase per item to be copied to F3, F4, F5 and F6.

(2marks)

(iv) Identify the data types in cell E3, C6 and A1.

(3marks)



- (b) List **four** hardware or software requirement that enable a computer to have multimedia capability. **(2marks)**

- (c) Mentioned **two** methods of checking genuineness, validity and legitimacy of a computer software. **(2marks)**

- (d) State **four** factors to consider when upgrading the computer memory modules. **(4marks)**

20.

- (a) Describe how the operating system handles the following in a computer system:

- (i) Data and program protection. **(1mark)**

- (ii) Interrupt. **(1mark)**

- (iii) Deadlock. **(1mark)**



- (b) Kingjames saved a document in his computer during the lesson. At the end of the lesson the teacher instructed him to delete the document, Kingjames looked for the document and was not able to locate the document. Describe **three** parameters that would help him located the document. **(3marks)**

- (c) Give a reason to justify why operating systems are the first software to be installed in a computer. **(2marks)**

- (d) Describe **three** parameters used to measure data integrity. **(3marks)**

- (e) Masala Complex is a small financial institution based in a rural in Kisumu County. The institution carries out transactions with both international and local financial organization. State four measures that the institution needs to adopt to minimize threats to its data integrity. **(4marks)**

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