

THE ROYAL EXAM SERIES

Kenya Certificate of Secondary Education

451/1 — COMPUTER STUDIES — Paper 1



THEORY
FORM 4
TERM 2



DECEMBER 2021- 2 1/2 HOURS

Name..... Index Number:.....

School

Candidate's Signature..... Date.....

INSTRUCTION TO CANDIDATE

- This paper consist of **TWO** sections **A** and **B**
- Answer all questions in section **A**
- Answer question 16 and other **THREE** questions from section **B**
- All answers should be written in the spaces provided on the question paper

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SECTION	QUESTION	SCORE
A	1-15	
B	16	
	17	
	18	
	19	
	20	
TOTAL SCORE		

Section A (40 marks)

Answer all the questions in this section

1. Write the following abbreviations in full: (1mark)

a) WIMP _____

b) CMOS _____

2. Give **three** characteristics of fifth generation computers. (3 marks)

3. Give **three** function of the enter/return key on the keyboard: (3 mark)

4. Name **four** special memories found in a computer system. (2 marks)

5. Give **two** disadvantages of magnetic tapes. (2 marks)

6. List **three** advantages of USB interface cable. (3 marks)

7. Differentiate between:

(4 marks)

a) Save and save as command.

b) Insert and Type over mode.

8. The formula =A1+C2 is initially typed in cell D1. How will it appear when copied to cell F1?
(2mks)

9. a) Explain **two** types of paper orientation

(2mks)

b) Differentiate between the following keys

(2mks)

Delete and backspace key

10. Give **four** differences between high and low level programming languages

(4mks)

11. Convert the following decimal number to binary.

(3marks)

$9\frac{1}{4}$

12. State **three** ways of representing a negative number in binary. (3marks)

13. Explain the meaning of the following terms as used in systems development: (2 marks)

a) Boundary

b) Environment

14. Describe **two** types of errors that can occur during program development. (2 marks)

15. Give **two** reasons why observation is sometimes disadvantageous when used in fact finding. (2 marks)

SECTION B (60 marks)

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

16.a) Differentiate between an interpreter and a compiler. (2 marks)

b) Give **three** qualities of a good flowchart. (3 marks)

c) Draw a program flowchart to represent the pseudocode below. (10 marks)

Begin

Initialize counter to one

Initialize sum to zero

While counter is less than or equal to 7 Do

 Get temperature

 Add Temperature to sum

 Increment counter by 1

End while

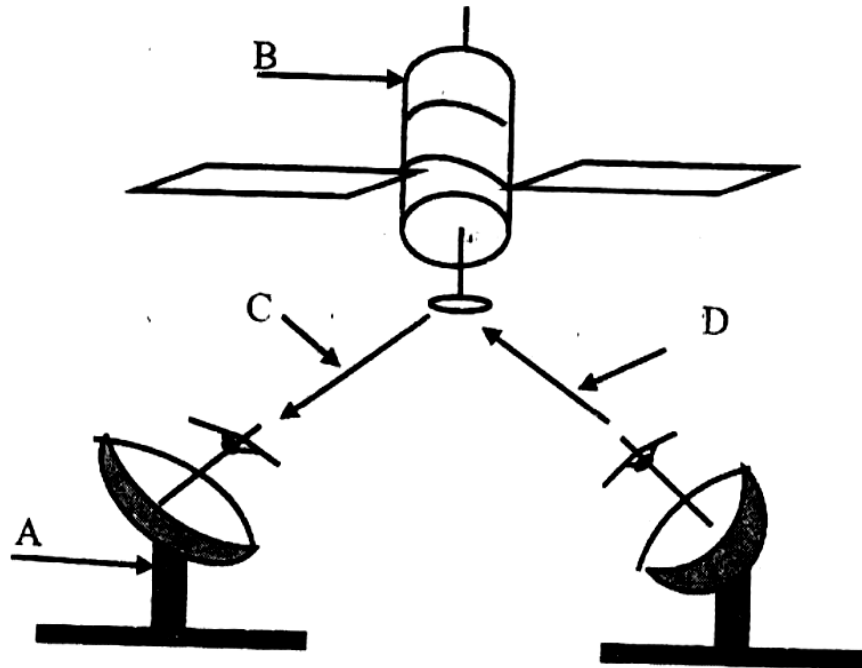
 Compute average temperature as sum divided by counter

 Print average temperature

End



17.a) a) Study the diagram below and answer the questions that follow:



i) Name the communication media depicted in the above diagram. (1mk)

ii) Name the parts labelled A, B, C, and D. (4 mks)

A _____

B _____

C _____

D _____

(b) Distinguish between bounded and unbounded transmission media, giving two examples in each.

(3mks)

(c) Differentiate between a modem and a multiplexer. (2mks)

d) Explain the function of the following network devices: (3mks)

i) Network interface card (NIC)

ii) Bridge

iii) Repeater

(e) List **two** advantages of cell phones over fixed lines. (2mks)

18. (a) Convert each of the following numbers:

(i) 110.101_2 to decimal; (3mks)

(ii) 12.6875_{10} to binary;

(4mks)

(c) Subtract 110.01_2 from 11001.0101_2 .

(2mks)

(d) Using twos complement, perform the following binary arithmetic leaving the answer in binary notation. (6mks)

$(+54_{10}) - (+29_{10})$

19.(a) Describe **three** types of validation checks as used in data processing. (6mks)

(b) A company has opted to store its employees' personal details in a computer system.

Describe **two** software methods that may be used to prevent unauthorized access to these details. (4mks)

(c) (i) Describe each of the following data processing modes:

I. real-time; (2mks)

II. Interactive. (2mks)

(III) State an application area where real-time data processing mode is applied. (1mk)

20. (a) Name two responsibilities that are carried out by : (4mks)

(i) Web administrator

(ii) Computer trainer

(b) State **two** reasons why users may resist the introduction of information and communication Technology (ICT) to their place of work (2marks).

(c) Suggest how computers may in future be made more user-friendly for persons that are:

a) Blind (1mk)

b) Without hands (1mk)

d) Describe how computing has been applied to each of the following areas:

i) Transportation systems. (2mks)

vi) Reservation systems. (2mks)



(f) (i) What is an expert system?

(1mk)

(ii) State any two components of an expert system

(2mks)
