

Name.....Adm. No.....Class.....

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
MARCH/APRIL 2017
TIME: 2 ½ HRS

MARCH EVALUATION EXAMINATION
Kenya Certificate of Secondary Education
(K.C.S.E)

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Instructions to candidates

1. This paper consists of TWO sections; A and B
2. Answer all questions in sections A.
3. Answer question 16 and any other THREE questions from section B.

FOR EXAMINERS USE ONLY

SECTION	QUESTION	
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS		

This paper consists of 9 printed pages.

Candidates should check to ensure that all pages are printed as indicated and that no question is missing.

SECTION A (40 MARKS)
ANSWER ALL QUESTIONS IN THIS SECTION

1. Differentiate the following types of computers. (2marks)

2. Distinguish between Optical scanners and Magnetic ink scanners. (2marks)

3. State any FOUR components found on the computer motherboard. (2marks)

4. Identify the FOUR types of storage media shown below. (2marks)



i



ii



iii



iv

- Compare the storage device (i) and (iii) above (1mark)

5. Make a clear difference between Log file and Firewall. (2 marks)

6. (a) Explain the meaning of the terms below as used in data security and controls. (2marks)

- (b) List two methods used to secure data in a database. (1mark)

- Differentiate between worm and virus. (1mark)

7. Make a clear difference between a Website and Web portal. (2marks)

8. (a) Mr. warubo runs a small business within his premises. His work includes writing CDs and troubleshooting computer hardware. In his laptop files are scattered all over his computer screen.

- (i) Which technique will you advise him to use order to bring files together? (1mark)

- (ii) Differentiate it with disk partitioning. (2marks)

- (b) Differentiate between interrupt handling and error handling (2 marks)

9. Output devices are used to present computer output in computer systems and in computerized devices. In the blank space provided, write down one output device suitable for the task indicated. (2 marks)

- (i) _____ is used in Computer Aided Design applications to produce very large printouts and accurate engineering drawings.

(ii) _____ is used to control the pointer on a laptop screen.

10. There are many statements said about the effects of ICT on employment jobs. Explain any TWO effects. (2 marks)

11. There are many careers in the field of ICT. For each of the task below, write down the most likely career title of the person doing it.

(a) Writing codes for a computer program. (1 mark)

(b) Testing a new information system (1 mark)

12. Radio communication is an area where computers are used to manage most of its operations. State any TWO applications of ICT in this area. (2 marks)

13. A computer accessories shop needs to order supplies. A spreadsheet program is used to calculate the order part of which is shown below.

	A	B	C	D
1.	Item	Price per unit	Number ordered	Cost (Kshs)
2.	56K modem	8,565.00	60	
3.	128 MB Ram	4,950.00	40	
4.	Pentium IV Processor	13,525.00	55	
5.			Total	

(a) Write down the data type that is stored in cell

(i) C3.

(1 mark)

(ii) D4

(1 mark)

(b) Using absolute referencing write an expression to calculate the total cost in cell D2. (1 mark)

(c) Write a function to display the number of cells in which the price per unit is greater than 5,000. (1 mark)

14. The figure below is a toolbar for a DTP package.



Name and state the functions of the tools labelled A, B, C and D.

(4 marks)

SECTION B (60 MARKS)

Answer question 16 and any other THREE questions from this section B

- 15.** (a) Define the term programming as used in computing (1 mark)

- (b) Explain any three methods of error detection in programming (3 marks)

- (c) Mokasa High school rewards students based on the mean mark in an exam. Once the mean mark is greater than or equal to 80%, a calculator is given, if the mean mark is greater than or equal to 70% and less than 80%, a textbook is given, if the mean mark is greater than or equal to 60% and less than 70%, a Geometrical set is given, if the mean mark is greater than or equal to 50% and less than 60%, a ruler is given otherwise a pen is given.

- (i) Write a pseudocode to prompt the user to read the students names, meanmarks and determine the reward to be given for twenty students. Display the student name, mean markand the reward given. (5 marks)

- (ii) Draw a flowchart for the pseudocode above (6 marks)

16. (a) Differentiate between transcription errors and computational errors (2 marks)

(b) (i) Mr. Okelo owns three schools where all the schools store their documents in one centralized computer. Explain the type of processing mode used that allows all the three schools to access the central computer. (2marks)

(ii) Distinguish the following modes with the mode given above.

• Online processing (2marks)

• Real time processing (2marks)

(c) State any THREE ways by which threats to data integrity can be minimized (3 marks)

(d) Differentiate between logical file and physical file (2marks)

(e) When a student is admitted in a school, a main file is created. A progressive report file is also created and each time a copy has to be updated and stored in the main file. Identify the two types of file created. (2marks)

17. (a) State two advantages of indexed-sequential over sequential file organization. (2marks)

(b) (i) Explain Rapid Application Development(RAD) as used in system development. (2marks)

(ii) Other than RAD, List other two theories used system development (2marks)

(c) Briefly explain the following characteristics of a system (6marks)

i) Boundary

ii) Control

iii) Environment

(d) List three factors contributing to the development of a new information system (3 marks)

(a) State the function of the following networking devices

(3marks)

iv) Bridge

v) Hub

vi) Switch

(b) In relation to the open system interconnection (OSI) model, state the functions of the following:

(2 marks)

i) Session layer:

ii) Transport Layer:

(c) (i) Define the term network protocol

(2 marks)

(ii) Explain the functions of any TWO types of network protocols used in networking (4 marks)

(d) List two types of radio wave transmission

(2 marks)

(e) Cloud computing is one of the emerging technologies in computing for many organizations in managing their data. Explain what you understand by cloud computing. (2 marks)

18. (a) Explain any Three coding schemes used in data representation

(2marks)

(b) (i) Using 8-bit representation, give the ones complement of -35_{10}

(3 marks)

(ii) What is the seven-bit of twos complement of 0110_2

(2marks)

(c) Perform the following calculation

(2marks)

(d) (i) Convert the binary number 110.101_2 to Octal

(2 marks)

(ii) Convert 10.001_2 to Hexadecimal

(2 marks)

(e) Using BCD representation, find the binary equivalent of 510

(2 marks)

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Page 10 of 10