

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

Date Student's Signature.....

451/1

COMPUTER STUDIES

PAPER 1

(THEORY)

MAY 2017

TIME: 2 ½ HRS

MID - TERM EXAMINATION

Kenya Certificate of Secondary Education

(K.C.S.E)

TIME: 2 ½ HRS

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

This paper consists of 10 printed pages.

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

SECTION A (40 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

1. State the type of computer memory described by the following statements: (3 marks)

(i) Memories found in input/output devices to ease processing tasks of the CPU

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(ii) A volatile memory that needs periodic refreshing or recharging to maintain its data storage.

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(iii) Memory consisting of approximately one million bytes

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2. a) Differentiate between a microfilm and a microfiche (2marks)

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b) State **two** application areas of Computer Output on a Microform (COM) (1 mark)

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3. (a) Today, the world is shifting from magnetic and optical storage devices to solid state storage devices. Explain the concept of data storage in a solid state storage device (2 marks)

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(b) The hard disk is said to have tracks sectors and cylinders. Define a cylinder (1 mark)

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4. Differentiate between firmware and utility software; giving an example in each case.(3 marks)

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5. State **two** ways of controlling dust and dampness in a computer laboratory. (2marks)

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6. (a) With appropriate examples, explain the meaning of the terms below as used in internet

(2 marks)

(i) URL (uniform Resource Locator)

.....

(ii) Domain name

.....

(b) List any **two** components of an e-mail (1 mark)

7. (a) Explain what the following search and replace options do in a word processing.(2marks)

(i) Whole word

(ii) Wildcards

(b) State the meaning of justification in word. (1 mark)

8. List **three** disadvantages of a laptop computer. (3 marks)

9. (a) Distinguish between a composite key and a candidate key as used in databases (2 marks)

(b) List any **two** disadvantages of a flat file database model. (1 mark)

10. Describe the following appropriate as used in data communication.

(a) is a network of Bluetooth enabled devices. (1 mark)

(b) is the maximum amount of data that a transmission medium can carry at any one time. (1 mark)

(c)refers to communication in both directions but one direction at a time. (1 mark)

11. Name **two** duties of a system analyst (2mks)

12. One of the duties of an accountant is to prepare the payroll for payment at the end of every month.

(a) State the file organization he can use for the payroll file (1 mark)

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(b) State the most appropriate mode of processing the accountant can adopt for processing the payroll. (1 mark)

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13. Give **three** ways in which ICT has impacted on automated production in manufacturing companies. (3 marks)

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14. State the purpose of the following as used in a computer system. (3 marks)

(a) Cache memory

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(b) Registers

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(c) Buses

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15. Write each of the following acronyms in full as used in data communication. (2 marks)

(a) FTP

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(b) Mbps

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Section B (60 marks)

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

16.(a) i. Explain Encapsulation as used in Object Oriented Programming. (1 mark)

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ii. Differentiate between logical and semantic errors in programming. (2 marks)

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(c) Mwanzo Baraka Sacco pays 8% interest on shares exceeding Kshs 50,000 and 5% on shares that do not meet this target. No interest is paid on members monthly contributions.

Design a pseudo code for a program that would

(i) Prompt the user shares and contribution for a particular member. (5 marks)

(ii) Calculate the interest and total contribution

(iii) Display the interest and total member Savings.

For the 50 members of the Sacco.

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c) Draw a flowchart for the above pseudocode

(7 marks)

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17. (a) Shujaa operates a cyber in town, he needs an operating system that would enable him manage other computers in the cyber. Classify the operating system he needs in terms of;

(1 mark)

(i) Accessibility by the other computers

.....

(ii) Service to the computers connected to it

.....

(b) Define the term interface as used in the operating system

(1 mark)

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(c) Referring to the operating system differentiate the terms listed below

(4 marks)

(i) Command-line based operating systems and Menu driven operating system

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(ii) Processor scheduling and resource management

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(d) Through the operating system, the user is able perform various disk management tasks such as disk formatting, disk and file compression, disk defragmentation and scanning the disk for errors. State any two effects of fragmentation of files

(2 marks)

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(e) Determine the octal equivalent of the hexadecimal number 7C3.

(2 marks)

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(f) Perform the calculation below using the twos complement leaving your answer in decimal number

(3 marks)

$$13_{10} - 22_8$$

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(g) Determine the decimal equivalent of the binary number 1101.101₂

(2 marks)

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18. (a) (i) With an aid of a diagram, describe Client-Server local area network (LAN).(5 marks)

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(ii) State **three** advantages of Client-Server local area network (LAN). (3 marks)

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(b)(i) Describe the term Random file organization methods as used in computer data processing. (2 marks)

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(ii) State **three** advantages of storing records using random file organization methods. (3 marks)

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(c) Differentiate between Real-time sharing and Interactive data processing modes.(2 marks)

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19. (a) i) What is a system documentation?

(1mark)

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ii) Explain **two** items that a good documentation must contain?

(4 marks)

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b) Explain the following terms as used in system development

(4 marks)

i. System feedback

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ii. System entropy

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c) Why is it important to train staff during system implementation?

(1mark)

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d) Explain any **two** components of an expert system.

(4 marks)

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20. (a) Computer technician found it necessary to disable an antivirus when working on a computer system. State **three** reasons that may have necessitated disabling of the antivirus. (3 marks)

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(b) A School opts to store students' fee payment and examination details in a computer system. Describe **four** software methods that may be used to prevent unauthorized access to these details. (8 marks)

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(c) State **four** layout guides in desktop publishing program (DTP) that assist a user to place an object in a preferred position. (4 marks)

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