NAME:…… **INDEX NO:……**

SCHOOL:…….. **DATE:…….**

SIGN:……..

451/1
COMPUTER STUDIES
Paper 1
(THEORY)
Time 2 ½ HOURS

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

451/1
COMPUTER STUDIES
Paper 1
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INSTRUCTIONS TO CANDIDATES

- Write your **Name**, **Index Number** and **School** in the spaces provided above
- This paper consists of Two sections **A** and **B**.
- Answer **ALL** questions in **Section A**.
- Answer question 16 and any other **THREE** questions from Section **B**.
- All answers should be written in the spaces provided on the question paper..

FOR OFFICIAL USE

SECTION	QUESTION	
A	40	
B	60	
	TOTAL MARKS	

This paper consists of 8 printed pages.
Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

SECTION A (Answer ALL questions in this section)

1. State **three** reasons why it is difficult to control, detect and prevent computer crimes. (3mks)
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2. Explain the difference between ring and star network topology. (3mks)

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3. State three factors that have led to slow growth of e-learning in Kenyan schools. (3mks)

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4. a) What is virtual Reality? (1mk)

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b) State <u>two</u> sensory devices used in virtual reality. (2mks)

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5. Describe the meaning of the following terms as use in ICT. (3mks)

i) Protocol

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ii) Gateway

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iii) Band width

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6. List down <u>four</u> features of user friendly program. (2mks)

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7. Explain <u>two</u> reasons why computer uses binary numbers in data representation. (2mks)

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8. List <u>four</u> types as courses in ICT offered at degree leven in Kenya. (2mks)

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9. Different between sorting and filtering of data as used in spreadsheet. (2mks)

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10. Distinguish between a system and an information system . (2mks)

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11. Convert the following into binary

i) $76CD_{16}$ (2mks)

ii) 123_8 (2mks)

12. Distinguish between DRAM and SRAM memories. (2mks)

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13. Outline the two types of twisted pain cables. (2mks)

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14. a) State and explain one type of computer processing file. (2mks)

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b) List three file organization methods. (3mks)

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15. Mobile phones have becomes common ICT devices. List some of the powerful capabilities that come with some of the latest embedded operating systems in mobile phones. (3mks)

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

16. a) What is translator as used in programming. (2mks)

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b) Describe briefly <u>three</u> type of language processors in programming. (3mks)

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c) By use of flow chart develop an algorithm for a program that will request user to enter amount of currency in dollars and convert it to Kenya shillings at a rate of KSh. 85 per dollar, then deduct a commission of 0.1% and display amount in Kenya shillings and commission charged. (8mks)

c) Draw a flow that represent a programs of mobile phone sim card verification. The program should give three chances for password trial. If the password is entered three times unsuccessfully, it should display an error message "sim blocked" it should also display numbers of trials remaining for the user to try password, otherwise it should display a menu if the password is correct.

d) Distinguish between object code and source code as used in programming . (2mks)

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17. a) Give provisions in Kenya laws governing and protecting our information. (5mks)

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b) Identify and explain <u>four</u> security threat on ICT. (4mks)

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c) List <u>four</u> features of Electronic mail. (2mks)

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d) Outline <u>four</u> short comings of the internet. (4mks)

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18. a) Describe the term data processing. (1mk)

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b) Explain <u>two</u> causes of errors in data processing. (2mks)

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c) Discuss any <u>two</u> computational errors in data processing. (2mks)

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d) Briefly describe the following electronic data processing modes: (4mks)

i) Multiprocessing

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ii) Multiprogramming

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iii) Realtime

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iv) Online

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e) i) What is data intergrity. (1mk)

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ii) State four ways of minimizing threats to data intergrity. (4mks)

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19. a) What is Artificial Neural Network? (2mks)

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b) Give two features of Neural Networks. (2mks)

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c) Explain the following conditions

i) Computer vision syndrome.(CVS) (2mks)

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ii) Repetitive strain injury(RSI) (2mks)

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d) Explain the role of environmental protection agency (EPA) (2mks)

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e) Describe <u>three</u> impacts of ICT on employment protection agency(EPA). (3mks)

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f) State <u>two</u> roles of system analyst. (2mks)

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20. a) State <u>three</u> standard coding scheme used computing and electronic systems. (3mks)

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b) Convert each of the following numbers

i) 101.001_2 to decimal. (3mks)

ii) 12.6875 to binary. (4mks)

iii) Add 110.01_2 to 11001.0101_2 (3mks)

d) Using <u>two</u> compliment perform the following arithmetic leaving your answer in binary form. (3mks)

$13_{10} - 10_{10}$