



FORM 4 COMPUTER STUDIES P.1
451/1 THEORY
JANUARY SERIES 2016
TIME: 2½ HOURS

<i>Date done</i>	
<i>Invigilator</i>	
<i>Date returned</i>	
<i>Date revised</i>	

Instructions

- Write your name and admission number in the spaces provided above.
- This paper consists of two sections A and B.
- Answer ALL the questions in section A.
- Answer question 16 (compulsory) and any other **three** questions from section B.

FOR EXAMINER'S USE ONLY

SECTION	QUESTIONS	MAX. SCORE	CANDIDATE'S SCORE
A	1 – 15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
	TOTAL SCORE	100	

- (b) Define what direct data capture is. (1mk)
6. (a) State the meaning of computer malware. (1mk)
- (b) Differentiate between cropping and resizing as used in DTP. (2mks)
7. Assume that cell F₅ to F₁₀ in a spreadsheet contains numeric values of salary earned by some workers and cell F₁₂ contains the value of 5%. Write a formula that will be used to increase the value stored in cell F₅ by 5%. (3mks)
8. (a) Differentiate between distributed processing and multiprocessing. (2mks)
- (b) Identify the underlined parts of the following email: alicen@gmail.co.ke. (2mks)
9. (a) Distinguish between Read and Write as used in storage media. (2mks)
- (b) State two functions of Inter Record Gap in magnetic tape. (1mk)

10. Define pixel as used in a computer. (2mks)

11. (i) Give an explanation why a computer laboratory should have the following. (2mks)

(a) Ergonomic keyboard

(b) Uninterruptable power supply

(ii) Highlight two measures that need to be put in place to avoid risks associated with electric shock. (1mk)

12. (a) Explain two functions of network server. (2mks)

(b) (i) Define crosstalk as used in networking. (1mk)

(ii) Explain briefly how token ring network functions. (1mk)

13. State two disadvantages of robots in an industry. (2mks)

14. Explain three parts of a taskbar. (3mks)

17. (a) Distinguish between physical and logical topology giving an example in each case. (2mks)

(b) High Height Academy wanted to network computers in the schools computer lab so that they can share resources. The lab has 30 computers. The schools' network administrator wanted all computers to act as server and client at the same time where there was no dedicated server. The computers and other devices were each to be connected to a common switch.

- (i) Identify the category of local network that was proposed by network administrator. (1mk)
- (ii) State two disadvantages associated with the proposed network category. (2mks)
- (iii) What category of LAN would you advice the administrator to use and why. (3mks)
- (iv) Identify the type of topology that was to be used for networking and state it's two advantages. (3mks)
- (v) Identify four resources that will be shared on the network. (2mks)

15. Describe three elements of Graphical User Interface. (3mks)

SECTION B

Answer question 16 compulsory and any other three questions

16. (a) Highlight three advantages of structural programming. (3mks)

(b) (i) A trader bought a car from a manufacturer and later sold the car to another person. Design a pseudocode that will accept the buying price and the selling price of the car. Determine whether the trader made a profit or loss. Calculate the loss/profit and display it. (5mks)

- (ii) Design a flowchart for the above case. (7mks)

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SECTION B

Answer question 16 compulsory and any other three questions

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(ii) Design a flowchart for the above case. (7mks)

(c) List two disadvantages of fibre optic cables. (2mks)

18. (a) List four ways in which data integrity can be compromised. (4mks)

(b) Distinguish between logical file structure and physical file structure. (2mks)

(c) Describe biometric security. (2mks)

(d) Outline any four general rules that must be observed to keep within the law when working with data and information. (4mks)

(e) Describe computer based simulation, giving an area of application and an advantage for simulation program. (3mks)

19. (a) A teacher has a document of 20GB in a hard disk. He wants to transfer the document into a CD of 700MB. Determine the number of CD's he requires. (3mks)

(b) Discuss the two types of CD's. (4mks)

(c) State any 3 disadvantages of magnetic diskettes. (3mks)

(d) Highlight 3 characteristics of flash memory. (3mks)

(e) Discuss any two functions of secondary devices. (2mks)

20. (a) Compute the value of X in the following expression.

(i) $24.35_{10} = X_2$ (3mks)

(ii) $6AB_H = X_{10}$ (2mks)

(b) Using two complement compute the following using 8 bit binary. (4mks)

(c) Subtract the following binary numbers using the one's complement method. (3mks)

(d) Convert 60578 to Hexadecimal. (3mks)