451/1
Computer Studies
Paper 1
(THEORY)
JUNE/JULY 2018
2 ½ Hours

1. State **one** function of each of the following.
(a) Peripheral devices (1 mark

(b) System software (1 mark)
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2. Give importance of having the following in computer laboratory;- (3marks)
i) Standard furniture in the laboratory
……
ii) Antiglare screen/ monitor
……
iii) UPS
……
……

3. Describe future trends in microcomputers in relation to:
(a) Hardware (2 marks)
……
(b) Software (2 marks)
……
……
……

4. Explain the meaning of BACKUP (2mks)
……

5. Differentiate between the following terms as used in word processing. (3marks)
(a) Drop Cap and Case
……
(b) Superscript and subscript
……
(c) Indent and tab
……

6. State two advantages of electronic spreadsheets over manual worksheets. (2marks)
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7. (a) State and explain any **<u>one</u>** type of computer processing file. (1mark)
……
(b) List any **<u>two</u>** file organization methods (2marks)
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8. Define a primary key field (3marks)
……

9. State the two requirements of computer program testing (2marks)

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……

10. A computer studies form one student was requested to format his diskette in Windows XP Operating System environment. Instead, he selected and formatted the hard drive by mistake.
    (a) Explain why the student had to format his diskette. (1 mark)
    ……
    ……
    (b) Explain a possible consequence of the mistake made by the student. (1 mark)
    ……
    (c) Describe **two** situations when the computer user will be required to format a storage media. (1 mark)
    ……
    ……
11. Worksheet cells are referenced using the column letter and row number e.g. D2 is cell in column D and row 2.
    Use the sample worksheet provided to answer the questions below.

	A	B	C	D	E	F
1	Moth	Jan.	Feb	Mar.	April	Total
2	Fees	460	460	460	460	
3.	Food	300	350-	305	270	
4.	Electricity	100	100	100	100	
5.	Fuel	150	150	150	150	
6	Transport	38	270	150	300	
7	total					

a) Write down the data type that is stored in cells C5 (1mark)

b) What cell contains the data items representing transport for the month of February? (1mark)

c) Write down the formula (1mark)

that may be used to compute the total in cell F6.

12. What is deadlock in reference to operating systems (2marks)

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13. One way in which computing technology has impacted positively on society is the ease of communication through the e-mail. State **two** disadvantages of e-mail. (2 marks)

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14. Differentiate between baseband and broadband signal as used in networking. (2marks)

a) Baseband signal

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b) Broadband signal

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15. Explain two ways of protecting data and information against unauthorized access.

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…… (2marks)

SECTION B (60 MARKS)

*Answer question 16 (**compulsory**) and any other **three** questions from this section.*

16. a) State the function of the following symbols as used in the flowchart.

(i)  (1 mark)

……

(ii) (1 mark)

…….

(b)To maintain a strategic fit Safaricom is introducing a tariff called the mega tariff that will lower costs to Safaricom to Safaricom calls and calls to other networks. Calls to Safaricom networks will be charged according to the time of the day as listed below:

-Between 8am to 12 noon – 6 Ksh

-Between 12 noon to 8pm-0.8 Kshs

-Between 8pm to 1 am -4Kshs

-Between 1 am to 8am- 1Kshs

Internal calls to other networks are charged at a fixed rate of Kshs 7 between 8am to 8pm and Kshs 5 the rest of the day. International calls are charged at a rate of Kshs 25 between 8am to 8pm and Kshs 35 for the rest of the day. All calls are charged per minute usage.

Mr. Wasswa Baale a business man who makes both internal and international calls would like to make maximum use of this tariff.

Write a pseudo code that would show him know the charges of calls with an appropriate label when he the inputs type of call and the time where appropriate. Use a 24 hour clock.
(7 marks)

(c) Design a flowchart for the pseudo code in 16(a) above. (6 marks)

17. Perform the following binary arithmetic and give your answers in decimal notation:
    (i) 1010.101 + 11.011 (3marks)

    (ii) 1010.011 – 11.011 (3marks)

(b) Covert the following numbers into their binary equivalents

    (i) 0.5625_{10} (3marks)

    (ii) 0.3125_{10} (3marks)

c) Using four – bit twos compliment, perform the following arithmetic (3marks)
101_2-111_2

18. A school computer laboratory is scheduled to undergo major renovations. The lab is schedule to receive new computer whose specifications are given below:-
    Pentium IV 2.8GHz processor
    40GB HDD
    3 ½ FDD
    256MB RAM
    56 x CD ROM
    17" SVGA TFT monitor

    The computers are going to be networked and will be able to browse the internet.

    a) Explain what is meant by the terms:- (2marks)

    i) FDD

    ……
    ……

    ii) HDD

    ……
    ……

    iii) SVGA

    ……
    ……

    iv) TFT

    ……
    ……

b) The computer is to be networked, name one extra device that should be fitted on every computer to enable this to happen (1mark)

    ……
    ……

c) The computer is to receive internet facilities through the server on a dial; up system. Name and describe the function of a special device that needs to be connected to the server to complete the connection. (1mark).

    ……
    ……

d) (i) The school has to apply star topology to link up the computer. List two advantages of this type of topology. (1mark)

    ……
    ……

    (ii) Name the central device used to connect the computers in this topology. (1mark)

    ……
    ……

e) List two other types of topologies that the school could have opted for (1mark)

    ……
    ……

f) List four advantages of using a network (2marks)

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g) (i) Data transmission via the internet is done using a mode known as packet switching. Describe this data transmission mode. (1mark)

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(ii) Name two other modes of transmission (1mark)

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h) (i) The school's LAN is done using UTR cable. List two advantages of using this type of cable. (1mark)

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(ii) List two advantages of using fibre cable in networking. (1mark)

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i) Data flows in the school's LAN in a duplex manner. Discuss two other types of data transmission in network giving examples. (2marks)

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19. a) The growth and widespread use of computers and its related technologies has led to job displacement, creation and replacement. Define the following terminologies.

(i) Job displacement (1mark)

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(ii) Job creation (1mark)

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(iii) Job replacement (1mark)

……

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(b) Natural language processing is an area of computer systems evolution.

(i) Differentiate between natural language processing and voice input/output. (2marks)

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(ii) State any **two** difficulties of implementing natural language processing. (2 marks)

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(c)(i) Explain **three** ways in which computers and related technologies can increase

stress in the workplace. (3 marks)

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(ii) Suggest **two** ways in which computer related stress in the workplace can be minimized. (2 marks)

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(d)State any **three** examples of Internet use that may be considered morally wrong. (3 marks)

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20. Define the following terms

(i) Database (½mark)

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……

(ii) Database management system (½ mark)

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(iii) Hierarchical database
(1mark)

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……

(iv) Relational database
(1mark)

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(v) Network database (1mark)

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(b) List the advantages of using an electronic database system for storage of data over the file approach. (4marks).

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(c) Study the spreadsheet below and answer the questions that follow

	A	B	C	D
1	WESTERN COMPBOOK CENTRE SALES			
2	*BOOK TITLE*	*PRICE PER BOOK*	*BOOKS SOLD*	

3	DBASE IV	400.00	145	
4	LOTUS FOR DUMMIES	460.00	15	
5	OFFICE WORD IN 3 DAYS	300.00	65	
6	LEARN C++ IN 3 DAYS	700.00	100	
7	TEACH YOURSELF PASCAL	700.00	200	
8	COMPUTER STUDIES	500.00	300	
9	THE CLEVER FOOL COMUTER	300.00	10	
10				

i) Write down the formula that can be used to find the price of the most costly book. (1mark)

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ii) Write down the formula that can be used to determine the total sales for the book titled COMPUTER STUDIES (1mark)

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iii) Write down the formula that can be used to determine the average price of the books.(1mark)

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iv) Write down the formula in cell D6 that can be used to find the new price per book if they went up by a percentage written in cell B 10 and the formula has to be entered only in cell D3 then be copied to others. (1mark)

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v) Write down the output in D7 if in B6 is 10% (1mark)

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(d) State any four advantages of using an electronic spreadsheet as compared to a traditional worksheet. (2marks)

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