451/1
COMPUTER STUDIES
Paper 1
Theory
July 2017
Time: 2½ Hours

FORM 4 END OF TERM 2 EXAM

COMPUTER STUDIES
Paper 1
July 2017
Time: 2½ Hours

INSTRUCTIONS TO CANDIDATES

* This paper consists of TWO sections A and B.
* Answer **ALL** the questions in section A.
* Answer question**16** and any other **THREE** questions from section B.

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Section	Question	Score
A	1 - 15	
B	16	
	17	
	18	
	19	
	20	
Total marks		

1. For each of the following generation of computers, State the technology used to control internal operations. (2marks)

i). 1st Gen..

ii). 2nd Gen..

iii). 3rd Gen..

iv). 4th Gen..

2. Explain the control structures given below:

a). Sequence (1mark)

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b). Selection (1mark)

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c). Iteration (1mark)

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3. Distinguish between cold and warm booting. (2marks)

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4. a) Explain the term flaming as used in internet communication (2Marks)

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b). A computer virus is malicious software which may affect the smooth running of a computer system or carry out illegal activities in the computer.

(i) Name three types of computer viruses and state the effect of each when it gets in to a computer (3 marks)

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(ii) State any two methods to control infection of a standalone computer by virus (2 marks)

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5. a). Explain the following interactive sensory equipment used in virtual reality.

i). Head gear. (2 marks)

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        ii). Body suit.   (2 marks)

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6.   Explain the meaning of the terms below as used in data communication.
    i). Attenuation   (1mark)

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    ii). Multiplexing   (1mark)

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7.   While purchasing computers for his school, the Principal of Njonjo High school preferred
a 6 months warranty option other than that of 1 year from the selling company. List TWO factors that
might have led him to do so.   (2 marks)

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8.   a) A worksheet contains data as shown below

Cell	A1	A2	A3	A4	A5	A6
Entry	75	50	62	84	42	

Write the formula to be entered in cell A6 to display the sum of values above 60.   (2marks)

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9.   (a)   Differentiate the terms data and information.   (1 Mark)

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    (b)   Explain any two causes of errors in data processing.   (2 Marks)

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10.   **Give three** main ways of classifying computers.   (1½Marks)

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11. Peter was sent to buy computers for the students' laboratory. He was supposed to take into account the following factors.

      ✓ Processor speed

      ✓ Memory capacity

      ✓ Compatibility

Give three main reasons for taking into account the above factors   (3Marks)

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12. Basic computer setup and cabling is a very important concept to be taught in a computer class. **Give** two reasons to support the above concept.   (2Marks)

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13. **State any two** factors to be considered when selecting hard copy output devices.   (2Marks)

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14. **State four** benefits of using a computer in a school store.   (2Marks)

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15. Most operating systems provide a *file system*. Mention any TWO file systems used in windows environment.   (2marks)

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16. (a) Consider the module flow charts extracts below

   (i)
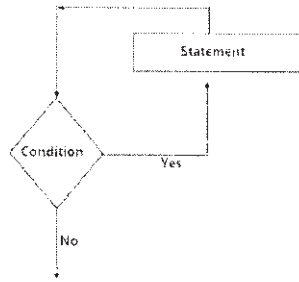
   (ii)
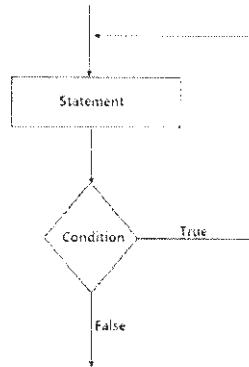
   State the looping structure demonstrated in   (2Marks)

   (i)

   ....

   (ii)

   ....

   (b)   List any two characteristics of Structured programming.   (1Mark)

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   (c)   Describe three benefits of structured programming.   (3 Marks)

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   (d)   State any two differences between an Interpreter and a Complier   (2Marks)

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e). State the outputs of the flowchart below: (4 marks)

START

X=15   Y = 3

Z = $\dfrac{X}{Y}$

Write Z

X = X – 3
Y = Y +1

X – 9
?

NO

YES

Stop
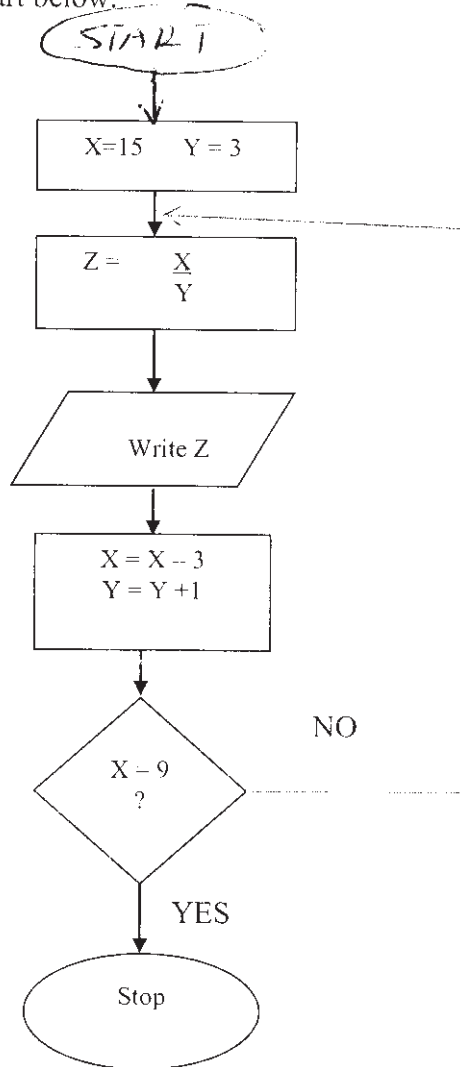
(f)   State three functions of programming language translators (3 marks)

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17 (a) As regards to communication within a computer network, what do you understand by the following terms:

i) Ethernet topology (1 mark)

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ii)   Token ring topology   (1 mark)

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(b) Give the full forms of the following acronyms   (1½Marks)

   (i)   UTP   -

....

   (ii)   RJ-45 -

....

   (iii) EMI   -

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(c). (a) Identify the cables below.   (2Marks)

i

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ii)

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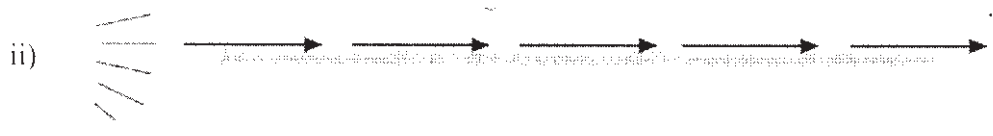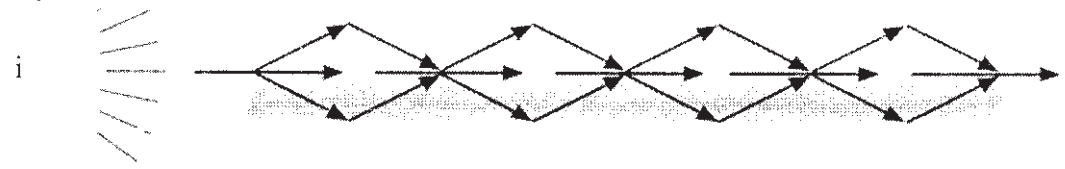
   (ii) **List three** elements of networking   (3Marks)

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(d) **State three** types of hubs   (3Marks)

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(e) Consider the topologies demonstrated in the diagram below
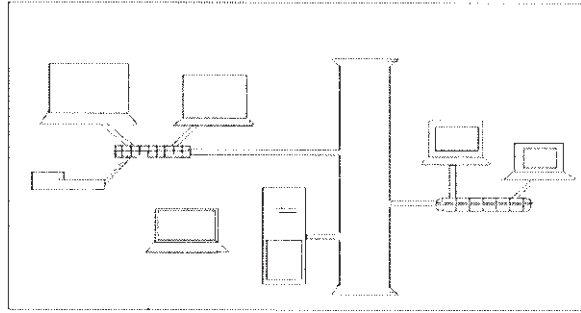
Identify the network topology   (1Mark)

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f) List any Three hardware devices that make up the above topology.   (3 marks)

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18.a) What is the meaning of the following as used in word-processing: (2Marks)
     i)   Word wrap

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....

     ii)   Drop caps

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b) Explain the function of the following tools.   (2Marks)

     i) Hand

....

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     ii)   Constrained line

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     iii)   Give three nonprinting guides used in DTP.   (3Marks)

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c) . Use the data given in the Excel worksheet below to answer questions that follow.

	A	B	C	D
1	NAME	CLASS	AGE	GAME
2	MARK	1W	13	RUGBY
3	KEN	1W	14	FOOTBALL
4	BILL	1S	14	RUGBY
5	DAVE	1W	15	RUGBY
6	BOB	1S	15	FOOTBALL
7	JACK	1W	14	FOOTBALL

i)   Write a formular to count the number of students who play Rugby.   (1mk)

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ii)   Write the results after filtering students who play football and their class is 1W.
        (1mk)

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d) i) Differentiate between macros and report in a database.   (2Marks)

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ii) List four tasks that can be performed in a database.   (2Marks)

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(e) Identify the most appropriate data type for these fields   (2Marks)

        (i)   Name: ....

        (ii)   Admission number:...

        (iii)   Fees:..

        (iv)   Gender:..

f)   From the above fields which field can be used as the primary key field? Explain?

                                                                                      (1Mark)

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19. a) Discuss any two most common computational errors in Data Processing. (2Marks)

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b) Using an illustration describe the four primary stages of the data processing cycle. (4Marks)

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c) Distinguish between Multiprocessing and multiprogramming. (2Marks)

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d). State *TWO* circumstances under which interviews may be used as a method of gathering information
. (2Marks)

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(e)   Prime systems Ltd. is a record label company. It wishes to introduce a computerized system, so it

has asked a team of consultants to investigate the possibility.

i.   The consultants first carried out an initial study and produced a feasibility report. Explain the
purpose of a feasibility report (2marks)

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ii.   Give TWO reasons why some clerical staff at Prime systems Ltd. might have been worried with
the prospect of computerization. (1mark)

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(f) State the stage at which the following activities are performed in system development lifecycle (3marks)

(i) Flowcharting.

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(ii) Staff training

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(iii) Changeover

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20.   (a) What is the difference between ASCII and EBCDIC   (2 marks)

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(b) Workout the following binary subtraction $11001_2 - 1101_2$ (2marks)

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c) Carry out the following arithmetic in twos complement.   (3 marks)
(Show your working)

$48_{10} - 12_{10}$

d)   Using BCD coding system convert 796 to binary.   (3Marks)

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(e) Convert the following numbers into their binary equivalents

      i. 0.5626_{10} (2 Marks)

      ii. 0.3125_{10} (2 Marks)

f).   State two reasons for using binary in digital technology.   (1 Mark)

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