Junior Lyceum Annual Examinations 2003
Educational Assessment Unit – Education Division
Malta

Form 3 (option)   **Computer Studies**   **Time 1hr 30min**

Name ……………………………………..   Class…………

Directions to Candidates:

*Answer **ALL** questions in **Section A** on this paper,*
*Answer any **TWO** questions from **Section B** on separate foolscaps,*
The use of flow chart template is permitted,
*Calculators are **NOT** allowed,*
Good English and orderly presentation are important

For office use only:

Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Paper Total	Course Work	Final Mark
Max	5	5	5	5	5	5	5	5	5	5	5	15	15	15	85%	15%	100%
Mark																	

Section A Answer all Questions

1   Fill in the blanks with the correct numerical answer:
   a)   In one **kilobyte** there are …………………bytes.
   b)   In one **Megabyte** there are …………………..kilobytes.
   c)   In one **Gigabyte** there are ……………………… kilobytes
   d)   A modern Hard Disc drive can store …………………… of data.
   e)   A floppy drive can store …………………of data

                                                                                      [5]

2   Using the following items draw a block diagram of a computer system, showing
     clearly how data flows in the system.
        CPU, Input device, Output device, Main Memory, Secondary storage

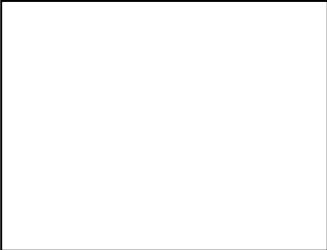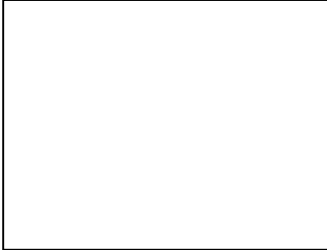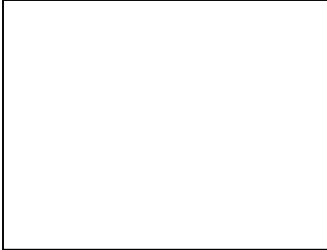   [5]

3   Explain the difference between the following terms:
     a) Hard copy and Soft copy _____
     _____
     _____   [1]

     b) Analogue and Digital   _____
     _____
     _____   [1]

     c) Serial data transfer and Parallel data transfer _____
     _____
     _____   [1]

     d) Vector device and Raster device _____
     _____
     _____   [1]

     e) RAM and ROM _____
     _____
     _____   [1]

4 a) Explain what you understand by two state electronic devices

_____
_____ [1]

b) Give one example from everyday life of a two state device.

_____ [1]

c) In the space provided below   draw the symbol, truth table and write the Boolean
formula for a two input AND gate

Symbol	Truth table	Boolean Formula

[3]

5 Write brief notes on the following input/output devices.
   a) Qwerty Keyboard. _____

_____
_____ [1]

b) Touch screen _____

_____
_____ [1]

c) Barcode Reader _____

_____
_____ [1]

d) Explain how one of the above devices may be very useful to people with
    special needs.

_____
_____
_____ [2]

6 Storage Devices fall under three main categories electronic, magnetic and optic.
   Name :
          a) Two electronic storage devices   _____
                                              _____
          b) Two magnetic storage devices   _____
                                              _____
          c) One Optic storage device   _____

                                              [1 mark each]
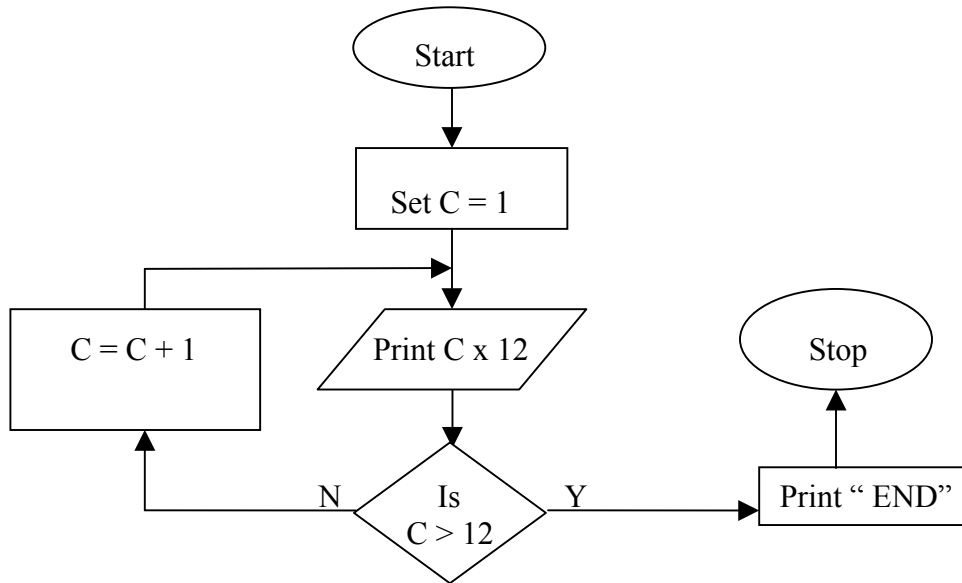
7   Fill in the blank spaces with appropriate words from the following list:
    Sectors,   floppy,   magnetic material,   circular,   retrieved,
    tracks,   stored,   electromagnetic,   hard,   formatted,

    A magnetic disk is a …………….. disk made of plastic and coated with a
    layer of ……………………….. on which data can be ……………. or
    …………………   This is done by …………………………. read / write
    heads. The disk may be rigid as in   …………. disks or flexible as in
    …………. disks. When a disk is …………. it is arranged in a number of
    ……………. and ……………….

[5]

8

a) The above flow chart represents an algorithm. Describe the process represented
by the flow chart.

_____

_____

_____

[2]

b) The table below shows the different stages of the above process, the first one is
an example, fill in the other cells.

When C is equal to	the screen will show
1	12
2	
	60
13	

[3]

9 Describe what are the duties of the following personnel who work in a data processing organisation.

Systems analyst:_____

_____

_____ [2]

Programmer _____

_____

_____ [2]

Data clerk. _____

_____

_____ [1]

10 a) When handling floppy discs the Windows Operating system provides us with some **utilities.** What do you understand by the term " utilities"?

_____

_____ [2]

b) List and describe three (3) utilities that help us when using floppy discs

1)_____

_____

_____

2) _____

_____

_____

3) _____

_____

_____ [3]

11 When data is transferred from the computer main memory to a printer it is stored in a buffer.

a) Where is this buffer usually found ?

_____ [1]

b) Explain why it is necessary to have such a buffer between the CPU and the printer?

_____

_____

_____

_____ [4]

Section B Answer two questions on a separate foolscaps

12   Write a Pascal program that allows a user to input two numbers. The user is then asked to enter a choice in the form of a menu. This menu allows user choose one option from the following:

> Addition
> Subtraction
> Multiplication
> Division
> Exit

The program will then process the mathematical operation chosen and print the two inputted numbers and the answer. Make the program user friendly, include in line comments to make the program understandable and pay attention to correct Pascal syntax
.   [15]

13   *This question is about spreadsheets*
a) With the help of examples describe and name the three types of data that can be stored in a spreadsheet cell.   [3]
b) Describe a situation where a spreadsheet is most suitable way of handling data. What makes spreadsheets so useful?   [4]
c) With the help of examples write notes on **two** of the following spreadsheet utilities:
   i)   Formulas and functions
   ii)   Sorting a set of data using properties in one column
   iii)   Creating a chart to represent data in picture form   [4]
d) Explain how **mail merge** allows you to send a word-processed letter, to a number of persons listed in a spreadsheet.   [4]

14   a)   What is an algorithm?
                                                                                             [1]

b)   Explain with the help of diagrams what you understand by:
   (i)   Step by step process
   (ii)   A loop
   (iii) A decision
                                                                                             [6]
c)   Design a flow chart or develop pseudo-code that describes an algorithm which allows the user to input 5 (five) numbers which are in the range $0 <= number <= 100$ and then prints the largest of these numbers.
                                                                                             [8]