DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2010

Tra

FORM 3 **COMPUTER STUDIES** **TIME: 1h 30min**

Name: _____ **Class:** _____

Directions to Candidates:

Answer **ALL** questions in **Section A** on this paper;
Answer **BOTH** 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:

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

Section A - Answer all Questions

1   The screenshot below shows part of a **spreadsheet** used in a school to store information on students.

	A	B	C	D	E	F
1		Maths	English	Maltese		
2	Joanne	67	77	88		
3	Peter	54	90	88		
4	Loretta	76	65	54		
5	Victor	88	73	76		
6	Isabel	90	63	91		
7	Matthew	81	66	52		
8						
9						
10	Total					
11	Average					
12	Maximum	=Max(B2:B7)				
13	Minimum					
14						
15						

Use the spreadsheet to answer the following questions.

  i.   What **formula/function** should be used in B10 to find the **total**?
  ii.   Using cell references only, what **formula/function** should be used in B11 to find the **average**?
  iii.   What would be the **result** of the formula in cell B12?
  iv.   Another way to interpret data is by charts. **Sketch** and **name** a suitable chart for such data.

i.   _____

ii. _____

iii. _____

iv. _____

_____

_____

_____

_____

_____

_____

_____

[5]

2 (a) i. Mention two main **differences** between **RAM** and **ROM**.
   ii. Which of the following three **units** is used nowadays for the **size** of RAM?

$$\text{GB} \qquad \text{MB} \qquad \text{KB}$$

1st Difference:

2nd Difference:

Unit used:

[3]

(b) One subunit of the **CPU** is the **Control Unit**.
   i. What is the **name** of the other subunit?
   ii. What is the subunit of part (i) above **used** for?

Name:

Used for:

[2]

3 (a) Tick (✓) the correct statement to show what **ASCII** is used for.

- To transfer data using a mouse
- To code the characters in binary
- To read a file from the hard disk

[1]

(b) i. Sketch an **analogue** signal and a **digital** signal in the boxes below.
   ii. Give an **example** of an analogue device and of a digital device.

Analogue	Digital

Example of Analogue:

Example of Digital:

[4]

4 Complete the table below to show each number in **Binary** (8 bit), **Decimal** and **Hexadecimal**.

Binary									Decimal		Hexadecimal
0	1	1	1	0	0	1	0	=		=	
								=	96	=	
								=		=	3E

Working space:

[5]

5 For each of the following devices state if it is an **Input** or an **Output** device:

i.	Braille keyboard:	
ii.	Trackball:	
iii.	Eye sensor reader:	
iv.	Graphics tablet:	
v.	Braille printer:	
vi.	LCD projector:	
vii.	Light pen:	
viii.	Touchpad:	
ix.	VDU:	
x.	Digital camera:	

[5]

6 State whether the following statements are TRUE or FALSE.

i.	A byte has 8 bits:	
ii.	A floppy disk has a capacity of 1.7MB:	
iii.	A CD holds more information than any pen drive:	
iv.	1 MB is equivalent to 10^{20} bytes:	
v.	1 GB is equivalent to 1024 MB:	

[5]

7 Complete the table below to show whether each of the following secondary storage media are: **magnetic**, **optical** or **electronic**.

i.	Compact Disc:	
ii.	Hard Disk:	
iii.	Flash Drive:	
iv.	Floppy Disk:	
v.	DVD:	

[5]

8   Use the following five terms to indicate the best item to use for the tasks given in the table below.

DVD   dot-matrix printer   MICR   scanner   laser printer

i. To read data from bank cheques:	
ii. To produce high quality hardcopies:	
iii. To backup large amounts of data:	
iv. To produce multiple copies of invoices:	
v. To transfer an old photograph into the computer:	

[5]

9   **Format**, **Scandisk**, **Defrag (defragmentation)** and **Winzip** are four useful programs.

i.   What are these programs **called**?

ii.   Which three (from the four) programs mentioned above must be used for the **tasks** given in the table below.

iii. Name the **program** that is used to stop a virus infection.

i.   _____

ii.

Puts together the parts of the same file that are scattered across a hard disk.	
Compresses files so that they require less storage space.	
Divides a new hard disk into tracks and sectors so that data may then be stored.	

iii.   _____

[5]

10   (a)   i.   What does **URL** stand for?
              ii.   What is a URL?

i: _____

ii: _____

_____

[2]

(b)   What is the difference between a **web browser** and a **search engine**?

Browser: _____

_____

Search Engine: _____

_____

[2]

(c)   Why are **bookmarks** (favourites) used when browsing on the Internet?

     Bookmarks: _____

     _____

[1]

11 (a)   Draw the **symbols** and complete the **truth tables** for the OR and the NOT logic gates.

OR gate		
Symbol:		
Truth table: A	B	X
0	0	
0	1	
1	0	
1	1	

NOT gate	
A	X
0	
1	

[4]

(b)   **Complete** the following sentence to show the function of the **AND** gate:

The AND gate produces a 1 at the output only if _____

[1]

Section B – Answer BOTH Questions

12   A database has to be created to maintain patients' information in a hospital. The following table shows the incomplete file specifications.

Field Name	Data Type	Size/Format
Name	Text	15
Surname	Text	15
	Text	
	Text	
	Number	
	Date/Time	
	Yes/No	

(a)   i.   Copy and complete the table above by filling in five more important **field names** and their **size/format** according to the given Data Types. [5]

     ii.   What difference must there be between a **normal field** and a **key field**? [1]

     iii. From the above specifications table, which field do you suggest as the **key field**? [1]

(b) In a database program facilities are available for performing particular tasks.
These tasks include **updating**, **querying** and **sorting**.

    i.   One updating task is that of 'editing' a record. Name and explain the
          two other **updating** tasks to keep the database up-to-date.

    ii.   What is a **query**?   [1]

    iii.   What is the difference between a **simple** and a **compound** query?   [2]

    iv.   What is **sorting**?   [1]

    v.   Why is it, at times, important to have the **records** in a database sorted?   [2]

13   The flowchart below describes a simple algorithm where the user is required to
        enter a number and then does something with that number.
        The steps of the algorithm are numbered for reference.
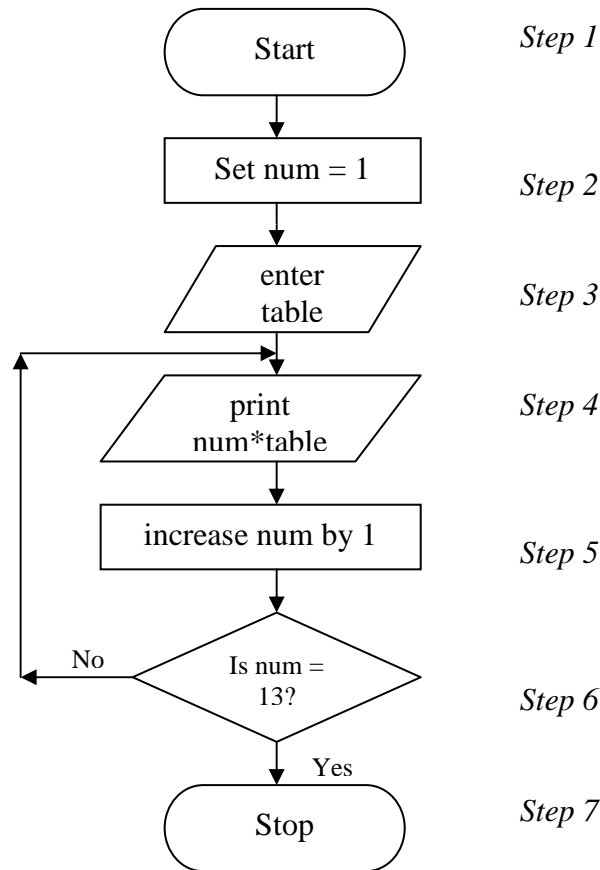
Use the flowchart above to answer the following questions.

    i.   **Draw** the flowchart symbol which represents: a **process**, a **decision**
          and an **input/output** task.   [3]

    ii.   What **arithmetic** process is being performed in *Step 4*?   [1]

    iii.   What **arithmetic** process is being performed in *Step 5*?   [1]

    iv.   How many times *Steps 4* and *5* are being repeated?   [2]

    v.   If the user enters the number 2 (represented by 'table' in *Step 3*), what
          will be the output?   [4]

    vi.   Briefly explain what the algorithm does.   [4]