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

Tr

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 above 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 shown in B12?
  iv.   Another way to represent data is by charts. **Sketch** and **name** a suitable chart for representing such data.

i. _____

ii. _____

iii. _____

iv. _____

_____

_____

_____

_____

_____

_____

_____

[5]

2   The **CPU** and **Central (main) Memory** are two important units of the comp
system.
    i.   **Name** the two subunits found in the CPU and briefly explain the
           function of each.
    ii.   Give **two** main differences between RAM and ROM.

Name subunit 1:

Function:

Name subunit 2:

Function:

1ˢᵗ Difference:

2ⁿᵈ Difference:

[5]

3   (a)   i.   Differentiate between an **analogue** and a **digital** signal.
           ii.   Give an **example** of an analogue and of a digital device.

Analogue:

Example:

Digital:

Example:

[4]

    (b) What is the **name** of the device that changes analogue signals to digital signals
and vice-versa?

Name:

[1]

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

[5]

Working space:

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 (a) How many **bits** are there in a:
   i. Byte; and
   ii. KB?

Byte: _____

KB: _____

[2]

(b) A database file contains 10,000 **records** and each record has 8 **fields**. Each field requires 20 **bytes** of storage space. Will the database file fit in a **floppy disk**? (Show your working to justify your answer)

Working space:

Answer: _____

[3]

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

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

[5]

8   For each of the following statements, indicate the most suitable **peripheral** to use:

i.	To read data from bank cheques to update the customers' accounts:	
ii.	To produce high quality black and white hardcopies at home:	
iii.	To sketch a cartoon on paper and at same time digitising it:	
iv.	To collect the information that was written on a questionnaire sheet:	
v.	To transfer an old photograph into the computer:	

[5]

9   (a)   **Format**, **Defrag (defragmentation)** and **Antivirus** and three important utilities. Briefly describe their function.

Format:

Defrag:

Antivirus:

[3]

   (b)   Another utility is the **file compression software** (eg Winzip). Mention two **situations** when files need to be compressed.

1st situation:

2nd situation:

[2]

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

i:

ii:

[2]

(b) Differentiate between a **web browser** and a **search engine**.

Browser:

Search Engine:

[2]

(c) Why are **bookmarks (favourites)** useful when using the Internet?

Bookmarks:

[1]

11 (a) You are typing a letter to a friend using the word-processor. Give **two** reasons to justify the use of the word-processor and not the spreadsheet program for this task.

1st Reason:

2nd Reason:

[2]

(b) **Table of contents**, **indexing** and **multicolumns** are three features used in word processing. Briefly explain what they are.

Table of contents:

Indexing:

Multicolumns:

[3]

Section B – Answer BOTH Questions
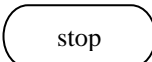
12 (a) A database has to be created to maintain the patients' information in a hospital. The following table shows the incomplete file specifications.
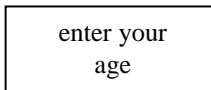
Field Name	Data Type	Size/Format
Name	Text	15
Surname	Text	15
	Text	
	Text	
	Number	
	Date/Time	
	Yes/No	
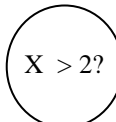
      i.   Copy and complete the table above by filling in **five** other important field names and their size/format according to the given data types. [5]

      ii.   How does a **key field** differ from a normal field? [1]

      iii.   Which field, from the specifications table above, do you suggest as the key field? [1]

      iv.   In a hospital the database needs to be **updated** regularly. Name and explain the **three** updating tasks to keep the database up-to-date. [3]

      v.   **OLE** is another data type that can be used in the database. What does OLE stand for and for what is it used? [2]

  (b) An important database facility is querying the database.

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

      ii.   Differ between a **simple** and a **compound** query. [2]

---

13 (a) **Flowcharts**, **pseudo-code** and **structure charts** are three terms associated with the solution to a problem.

      i.   Explain the **difference** between the three terms. [3]

      ii.   Give one **situation** where pseudo-code is preferred to flowcharts. [1]

      iii.   A, B and C below are three flowchart symbols together with some text. State whether each symbol is being used **correctly or not**.

A (stop)   **B** [enter your age]   **C** (X > 2?)   [3]
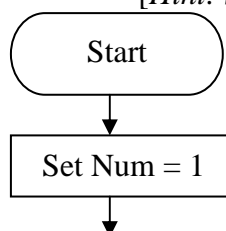
  (b) Copy and complete the flowchart below to solve the following problem:
- Ask the user to input a number;
- According to the number input, the mathematical times results from 1 to 12 are printed.

That is, if 3 is entered the output will be: 3, 6, 9, … 33, 36.

[*Hint: Some steps need to be repeated.*]

[8]

(Start)

↓

[Set Num = 1]

↓