



**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		<b>Maths</b>	<b>English</b>	<b>Maltese</b>		
2	<b>Joanne</b>	67	77	88		
3	<b>Peter</b>	54	90	88		
4	<b>Loretta</b>	76	65	54		
5	<b>Victor</b>	88	73	76		
6	<b>Isabel</b>	90	63	91		
7	<b>Matthew</b>	81	66	52		
8						
9						
10	<b>Total</b>					
11	<b>Average</b>					
12	<b>Maximum</b>	=Max(B2:B7)				
13	<b>Minimum</b>					
14						
15						

Use the spreadsheet to answer the following questions.

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

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[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?

**GB    MB    KB**

**1<sup>st</sup> Difference:** \_\_\_\_\_

**2<sup>nd</sup> 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 For each of the following devices state if it is an **Input** or an **Output** device: [5]

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:	

6 State whether the following statements are TRUE or FALSE. [5]

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:	

7 Complete the table below to show whether each of the following secondary storage media are: **magnetic**, **optical** or **electronic**. [5]

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

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.

**Symbol:**

OR gate		

NOT gate	

**Truth table:**

A	B	X
0	0	
0	1	
1	0	
1	1	

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**

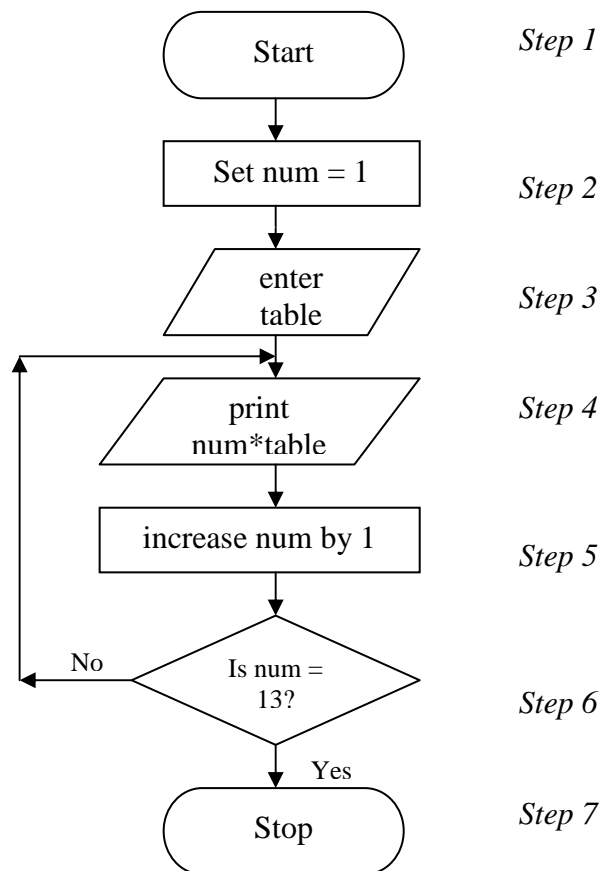
12 A database has to be created to maintain patients' information in a hospital. The following table shows the incomplete file specifications.

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**.
- One updating task is that of ‘editing’ a record. Name and explain the two other **updating** tasks to keep the database up-to-date. [2]
  - What is a **query**? [1]
  - What is the difference between a **simple** and a **compound** query? [2]
  - What is **sorting**? [1]
  - 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.

- Draw** the flowchart symbol which represents: a **process**, a **decision** and an **input/output** task. [3]
- What **arithmetic** process is being performed in *Step 4*? [1]
- What **arithmetic** process is being performed in *Step 5*? [1]
- How many times *Steps 4* and *5* are being repeated? [2]
- If the user enters the number 2 (represented by ‘table’ in *Step 3*), what will be the output? [4]
- Briefly explain what the algorithm does. [4]

