

FORM 3

COMPUTING

TIME: 1h 30min

Name: _____

Class: _____

Directions to Candidates:

*Answer ALL questions in **Section A** and **Section B** on this paper;
 The use of flow chart template is permitted;
 Calculators are **NOT** allowed;
 Good English and orderly presentation are important.*

For office use only:

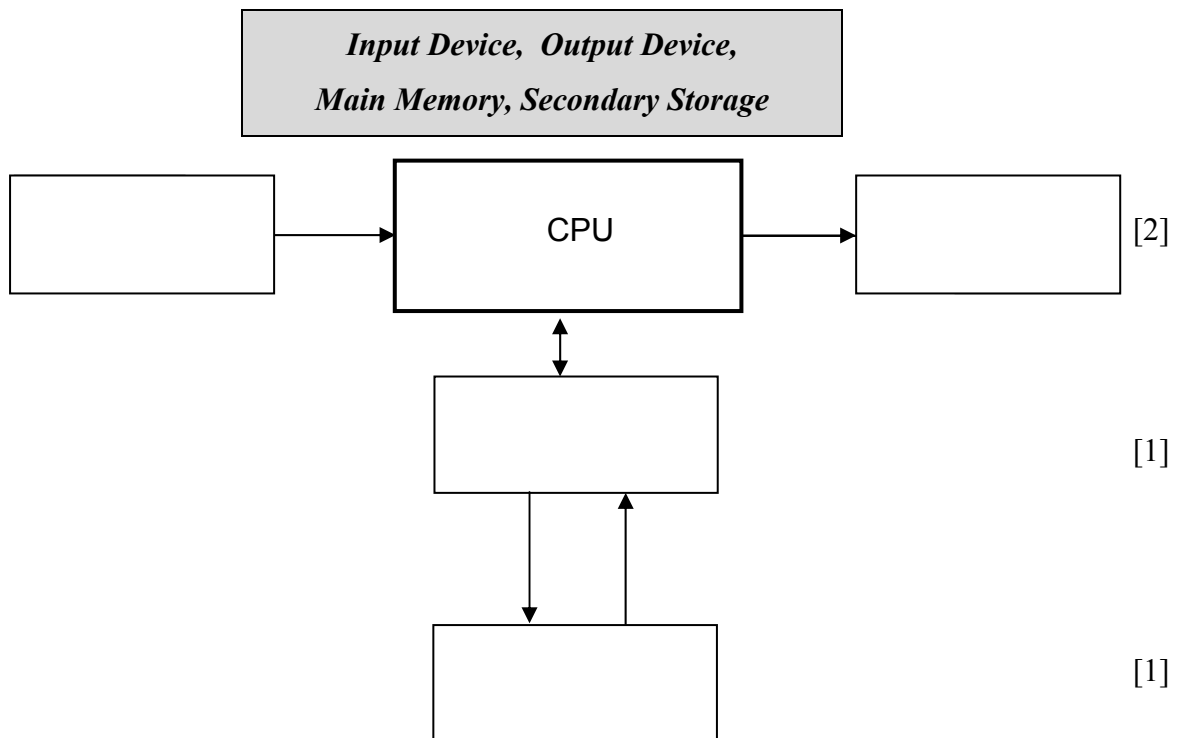
Question	1	2	3	4	5	6	7	8	9	10	11	12	13	Paper Total	Course Work	Final Mark
Max	5	5	5	5	5	5	5	5	5	5	5	15	15	85%	15%	100%
Mark																

Section A - Answer all questions

1. Answer the following by writing **True** or **False**. *The first one has been done for you.*

a.	Laser printers are non-impact printers.	True	
b.	A monitor and a projector produce a softcopy of output.		[1]
c.	A printout is an example of a softcopy.		[1]
d.	Impact printers are noisy.		[1]
e.	Laser printers are faster than inkjet printers.		[1]
f.	Dot matrix printers produce better quality pictures than inkjet.		[1]

2. a. The main part of a computer system is the CPU. Use the following four terms to **label** the diagram of a computer system given below:



b. A library system uses a computer system to manage book loans and book returns. Suggest one **advantage** of using a computer rather than doing this job manually.

[1]

3. Use one of the following five **devices** for each of the statements given below. *The first one has been given as an example.*

Touchpad, hard disk, ~~data gloves~~, joystick, plotter, dot matrix printer

a.	An input device often used in Virtual Reality applications.	Data gloves	[1]
b.	A pointing device found on portable computers (e.g. Laptops).		[1]
c.	A slow, poor quality impact printer that can produce carbon copies.		[1]
d.	A magnetic storage device that is the main form of backing storage on most computer systems.		[1]
e.	An output device used to print maps.		[1]
f.	An input device often used when playing games.		

4. A supermarket uses a computer system to produce bills.

a. Name an **input device** that could be used to enter the product details.

_____ [1]

b. Suggest two **advantages** of using the device of part 'a.' above rather than typing the item prices manually.

i. _____ [1]

ii. _____ [1]

c. OMR (optical mark reader) and OCR (optical character reader) are two input devices. Write **OMR** or **OCR** for each of the following tasks.

	Task	OMR or OCR	
i.	Recognises scanned letters of the alphabet.		[1]
ii.	Detects the presence of a mark on paper.		[1]

5. Give one typical **use** for the following items. *The first one has been given as an example.*

a.	Graphics tablet	Inputting drawings.	
b.	LCD Projector		[1]
c.	Laser Printer		[1]
d.	Digital Camera		[1]
e.	Braille printer		[1]
f.	CD-ROM		[1]

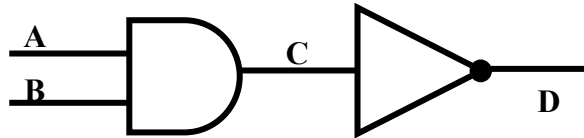
6. Logic gates are found in a computer system.

a. Name the following logic gates.



[2]

b. Study the following logic circuit. Then **complete** its truth table below.



A	B	C	D
0	0		
0	1	0	1
1	0		
1	1		

[1]

[1]

[1]

7. The following are five Utility Software. Which software is **used** to perform the tasks given below?

Compression software (eg Winzip), Antivirus, Format, Defragmentation, Scandisk

Task	Utility Software
a. Removing a virus from the computer.	
b. Preparing a new disk for storing data.	
c. Arranging parts of the same file on a disk near each other.	
d. Checking the disk for physical damage.	
e. Reducing the size of a file.	

[1]

[1]

[1]

[1]

[1]

8. a. **Convert** the following numbers into decimal, hexadecimal or binary as indicated. Show your working.

Binary	Decimal
11010	Answer _____
Decimal	Hexadecimal
57	Answer _____
Hexadecimal	Binary

[1]

[1]

1A	Answer _____
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[1]

b. Use two of the following words to complete the sentence below.

decimal, binary, hexadecimal

The _____ number system has a base of 2 while the _____ number system has a base of 16.

[1]

[1]

9. a. The following is a screenshot of a Spreadsheet.

	A	B	C	D	E	F	G	
1		Family Budget Yearly Summary						
2								
3								
4			Income	Expenditure	Money Saved	Percentage Saved		
5		January	€ 1,280.50	€ 932.40	€ 348.10	27.18%		
6		February	€ 1,080.50	€ 954.40	€ 126.10	11.67%		
7		March	€ 990.50	€ 939.70	€ 50.80	5.13%		
8		April	€ 950.50	€ 932.40	€ 18.10	1.90%		
9		May	€ 1,180.50	€ 875.30	€ 305.20	25.85%		
10		June	€ 980.50	€ 784.30	€ 196.20	20.01%		
11		July	€ 1,250.50	€ 1,235.50	€ 15.00	1.20%		
12		August	€ 1,000.50	€ 932.40	€ 68.10	6.81%		
13		September	€ 999.50	€ 866.90	€ 132.60	13.27%		
14		October	€ 1,340.50	€ 932.40	€ 408.10	30.44%		
15		November	€ 1,980.50	€ 894.30	€ 1,086.20	54.84%		
16		December	€ 1,780.50	€ 999.20	€ 781.30	43.88%		
17								
18		Total	€ 14,815.00	€ 11,279.20	€ 3,535.80			
19		Average	€ 1,234.58	€ 939.93	€ 294.65	20.18%		
20								

i. Write the **formula** that was typed in cell C18. _____ [1]

ii. Write the **formula** that was used in cell C19. _____ [1]

b. Spreadsheet data can be represented using graphs/charts. **Sketch** and **name** one graph/chart that is available in a spreadsheet application.

Sketch of graph/chart

_____ [2]
Name of graph/chart

c. A word processed document can be joined with spreadsheet data to generate personalized letters. Tick (✓) the **name** of this feature.

Mail Merge
 Find and Replace
 Spell Check
 [1]

10. The Internet has various uses in business.

a. Suggest one **advantage** of using email in business.

_____ [1]

b. Mention two **other uses** of the Internet besides email.

i. _____ [1]

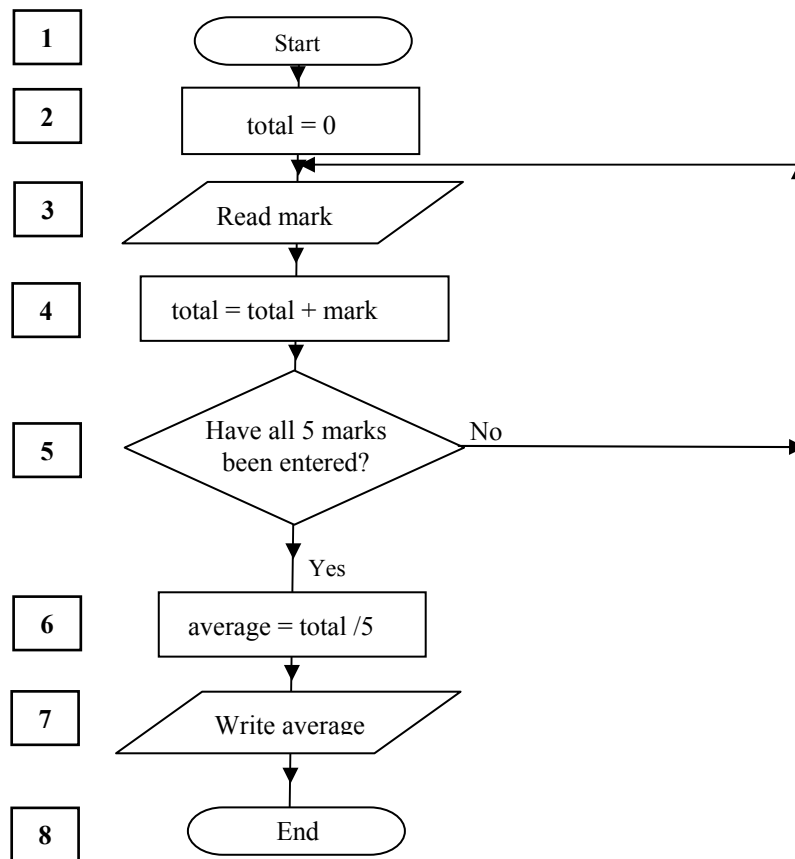
ii. _____ [1]

c. What do WWW and URL **stand** for?

WWW _____ [1]

URL _____ [1]

11. The following flowchart accepts five exam marks and outputs the average. Each symbol has been numbered for ease of reference.



Study the flowchart above and then write the **number of the flowchart symbol** representing each of the following.

a. An input instruction _____ [1]

b. An output instruction _____ [1]

c. A decision _____ [1]

d. A process _____ [1]

e. **Complete** the following sentence:

The loop starts with symbol 3 and ends with symbol _____. [1]

Section B – Answer BOTH Questions

12. The *Lego Mindstorms NXT Kit* allows us to create programs to control robotic devices.

a. Use the following seven terms to **label** the picture of the device shown below.

Ultrasonic sensor, LCD screen, Touch sensor, NXT buttons, Motor, Sound sensor, NXT brick

[7]

b. The following is a picture of a simple 3-block program and three empty boxes.

[3]

- i. The three blocks (not in the correct order) are:
- Looping block (**A**)
 - Move block (**B**)
 - Sound block (**C**)

Write the letters **A**, **B** and **C** in the boxes above to show the type of block.

ii. What **sensor** is being used in the program above? _____ [1]

iii. This program makes use of two **output devices**. Write them down below.

1. _____ 2. _____ [2]

c. A program may consist of three constructs. One construct is the 'loop (repetition)'. Underline the other **two constructs** from the following list.

Algorithm, Sequence, Flowchart, Selection [2]

13. A computer generally requires both Main Memory and Backing (Secondary) storage.
- a. **Tick (✓)** to show whether the following three items are Main Memory or Backing Storage.

	Item	Main Memory	Backing Storage	
i.	Hard Disk			[1]
ii.	Pen Drive			[1]
iii.	RAM			[1]

- b. RAM and ROM are both electronic Memory. **Tick (✓)** to show whether you associate each property with either RAM or ROM.

	Property	RAM	ROM	
i.	Volatile			[1]
ii.	Read and Write			[1]
iii.	Boots up system			[1]
iv.	Read Only			[1]

- c. Draw **arrows** to match the following storage devices with their typical capacities.

Storage Device	Capacity	
CD- ROM	5 GB	[1]
Hard Disk	650 MB	[1]
Pen Drive	500 GB	[1]
DVD-ROM	32 GB	[1]

- d. Give one typical **use** for each of the following storage devices. *The first one has been given as an example.*

	Device	Use	
i.	Pen Drive	Keeping backups of user documents	
ii.	DVD-ROM		[1]
iii.	Hard disk		[1]

- e. Mention:

- i. A **magnetic** storage medium: _____ [1]
- ii. An **optical** storage medium: _____ [1]