MARIA REGINA COLLEGE
BOYS' SECONDARY MOSTA

Triq il-Biedja, Mosta
Tel: 27445001/2
Email:mrc.mosta.bs@gov.mt

SUBJECT: COMPUTING FORM 3 DATE: 17th January 2014 TIME: 1 hr. 45 mins

NAME: _____ CLASS: _____

Don't write anything in the following section

1	2	3	4	5	6	7	8	9	10	11
10	15	5	5	7	5	8	15	10	10	10

Instructions to Candidates

Answer ALL questions.
No calculators allowed.

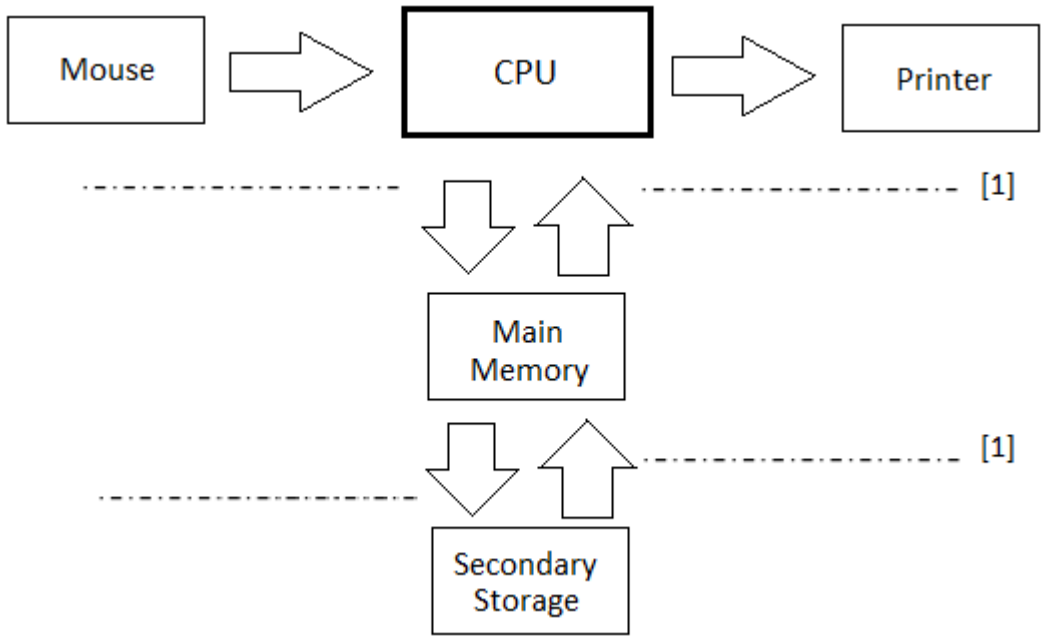
1. This question is about Computer Systems.

There are **seven** basic functions of a computer system. One such function is the **processing** of data.

a. Four other basic functions of computer systems are:

output,	*retrieve,*	*save,*	*input*

Label the diagram below with these **four functions** by writing one function on the appropriate dotted line.



b. List the other **two basic functions** of a computer system (besides those mentioned above).

[1] [1]

c. Give **one advantage** of using a computerized stock control system in a shop instead of inputting data manually.

[1]

d. What do the following **acronyms** stand for: [5]

i. **CPU** _____

ii. **CU** _____

iii. **ALU** _____

iv. **ROM** _____

v. **RAM** _____

2. This question is about Computer Systems

a. Mention **two input devices** and **two output devices**:

Input	
	[1]
	[1]

Output	
	[1]
	[1]

b. Mention a device that is **both input** and **output:**

_____[1]

c. In the space provide write the **difference** between:

i. **Application Software** and **System Software** _____

_____

_____

ii. **Data** and **Information** _____

_____

_____

iii. **Serial Access** and **Direct Access**

iv. **RAM** and **ROM**

v. **Main Memory** and **Backing Storage**

[10]

3. This question is about Hardware and Software

From the following list **distinguish** between **hardware**, **application software** and **system software**.

Put a ✓ in the correct column, like the example shown. [5]

	Hardware	Application software	System software
a. Printer	✓		
b. Word Processor			
c. Windows 8			
d. Mouse			
e. Hard Disk			
f. Fifa 14			

4. This question is about Units of Storage

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

		True	False
i.	**1024 * 1024 bytes** are equivalent to **1 Kilobyte.**		
ii.	**Bit** is short for **binary digit.**		
iii.	A **Terabyte** is equivalent to **1024 Gigabytes.**		
iv.	**8 bytes** make **1 bit.**		
v.	A digital computer uses **two states** to represent the bits, **0** and **1.**		

5. This question is about Analogue and Digital data

a. Complete the passage below using words from the box.

digital	***modem***	***discontinuous***	***analogue***	***both***
AD converter	***telephone***	***continuous***	***DA converter***	***converted***

A computer deals only with _____ data. This kind of data is also known as _____ data. Another kind of data is known as _____ or _____ data. This data is obtained continuously.

Data transferred over _____ lines is analogue so when it enters a computer it needs to be _____ to digital data. In this case a _____ is used. This acts as a _____ and as an _____. A modem is _____ an input and output device. [5]

b. In the space provide draw the **analogue** and **digital signals**.

Analogue

[1]

Digital

[1]

6. This question is about Computer Coding

a. What does the term **ASCII stand for**?

_____ [1]

b. Why is ASCII **important** for the computer?

_____ [1]

c. Given that in ASCII, "**A**" has the decimal value of $\mathbf{65_{10}}$, what is the **binary** value of "**C**"?

_____

_____ [2]

d. Apart from ASCII, mention another **character set** commonly used.

_____ [1]

7. This question is about utility software

a. What are **utility programs**?

_____

_____ [2]

b. Name **three utility programs** and explain what they are **used** for:

Program: _____

Use: _____ [2]

Program: _____

Use: _____ [2]

Program: _____

Use:_____ [2]

8. This question is about Binary numbers

Decimal, binary and hexadecimal are three types of number systems.

a. How many different codes can be represented using **3 bits**? [3]

Working

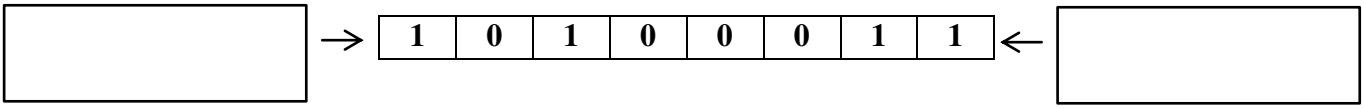
b. What is the **base** of the hexadecimal number system?

_____ [1]

c. Which of the **three number systems**, is the one that is **actually used** by the hardware of a computer system?

_____ [1]

d. Label the **Most Significant Bit** and the **Least Significant Bit** for the binary number below. [2]



e. Complete each row of the table to show the same number in binary, hexadecimal and decimal.

IMPORTANT SHOW WORKING - Space for working is provided on next page.

	Binary									Hex		Decimal	
i.	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1_2**	=		=		[2]
ii.									=		=	**100_{10}**	[2]
iii.									=	**BC_{16}**	=		[2]
iv.									=		=	**33_{10}**	[2]

Working

9. <u>This question is about Word processors</u>

One of the most commonly used application packages is the **word processing** application.

a. List **two advantages** of using a word processor instead of a typewriter.

_____

_____

_____ [2]

b. Briefly explain what do you understand by the following word processing features

i. Table of contents _____

_____ [2]

ii. Headers and Footers _____

_____ [2]

iii. Spell Check _____

_____ [2]

iv. Mail Merge _____

_____ [2]

10. This question is about spreadsheets.

A spreadsheet application is a computer program such as Excel which has a number of built in features and tools, such as functions, formulas, charts, and data analysis tools that make it easier to work with large amounts of data.

a. Describe a **situation** where spreadsheets are used to handle data.

_____ [1]

b. What is the difference between a **function** and a **formula**?

_____

_____ [2]

c. When we use a spreadsheet we can use charts. Why are **charts** used?

_____

_____ [1]

d. Name a **type of chart** and write a **suitable use** for this chart.

_____

_____ [2]

e. Write down the appropriate **formula or function** which should be written in cells:

	A	B	C	D
1	**Item**	**Quantity**	**Price (€)**	**Subtotal (€)**
2	FIFA 14	2	54.95	D2 ←
3	Grand Theft Auto V	3	59.95	
4	Call Of Duty: Ghosts	2	55.95	
5			**TOTAL**	D5 ←
6				
7	**Average Price (C2:C4)**		C7 ←	
8	**Lowest Price: (C2: C4)**		C8 ←	

i. **Total cost** of FIFA 14 in cell D2 _____

ii. **Total of all items** in cell D5 _____

iii. **Average price** in cell C7 _____

iv. **Lowest price** in cell C8 _____ [4]

11. <u>This question is about logic gates.</u>

The **AND** gate, the **OR** gate and the **NOT** gate are three common gates used in computers.

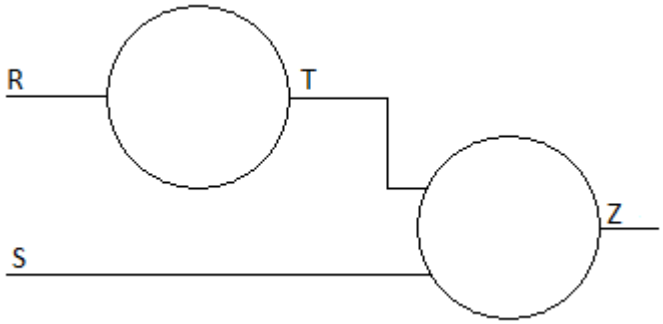
a. Which of these gates is also known as an **Inverter**? _____ [1]

b. What is the purpose of a **truth table**? _____

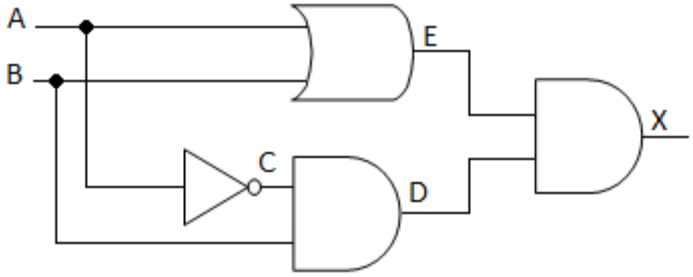
_____ [1]

c. Observe the below truth table and **draw the missing logic gates** in the logic circuit. [3]

R	S	T	Z
0	0	1	1
0	1	1	1
1	0	0	0
1	1	0	1



d. Fill the truth table for the below logic circuit. [5]



A	B	C	D	E	X