

KULLEĠĠ SAN BENEDITTU

Boys' Secondary, Kirkop

Mark

HALF-YEARLY EXAMINATION – 2011/12

Track 3 (JL)



FORM 3 **COMPUTING** **TIME: 1h 30min**

Question	1	2	3	4	5	6	7	8	9	10	Global Mark
Max. Mark	16	13	15	6	9	12	4	7	8	10	100
Mark											

DO NOT WRITE ABOVE THIS LINE

Name: _____

Class: _____

Instructions:

- Answer **ALL** questions.
- Calculators are **NOT** allowed, so show all your working on the exam paper.
- Good English and orderly presentation are important.
- Read carefully each question.

1. General Section

[16 marks]

a. What do these acronyms stand for?

[6 marks]

i. CPU		ii. ROM	
iii. RAM		iv. MICR	
v. CRT		vi. VDU	

b. Distinguish between the following terms.

[10 marks]

i. Hard copy and soft copy

ii. Primary and secondary storage

iii. CD-RW and CD-ROM

iv. Impact printer and non-impact printer

v. CRT Monitor and TFT monitor

2. This question is about the Computer System

[13 marks]

- a. The four main components of a computer system are **input, output, processing** and **storage**. Draw a block diagram of a computer system that contains all of the above components and show how data flows between them (using arrow lines).

[6 marks]



- b. Briefly describe each of the components mentioned above. [4 marks]

Input: _____

Processing: _____

Output: _____

Storage: _____

- c. List the three components that make up the CPU. [3 marks]

i. _____

ii. _____

iii. _____

3. This question is about Storage. [15 marks]

- a. Put the storage devices below under the correct column. [5 marks]

Pendrive	Hard disk	Zip disk	CD-RW	SD-Card
Magnetic Media		Optical Media		Electronic Media

- b. Fill in the blanks: [6 marks]

- _____ is the data access method used by magnetic tape.
- The _____ is a secondary storage device that is most commonly used for backups and archiving information.
- A _____ is a removable read-only disk on which data is read through the use of laser beams.
- Data is recorded on a disk in rings called _____ and slices called _____.
- A hard disk has two advantages over floppy disks: reliability and _____.

c. List down two differences between RAM and ROM.

[4 marks]

i. _____

ii. _____

4. This question is about Input and Output Devices.

[6 marks]

Give an application for each of the following devices.

a. Dot Matrix	
b. Laser Printer	
c. Touch Screen	
d. MICR	
e. Joystick	
f. Lightpen	

5. This question is about Analogue and Digital Data.

[9 marks]

a. Draw a graphical representation of an analogue and digital signal.

[2 marks]

Analogue

Digital

b. What is the difference between **Analogue** and **Digital data**?

[2 marks]

c. Give an example of each type of data. [2 marks]

Example of analogue data: _____

Example of digital data: _____

d. For each of the following situations, write down a computer device which is appropriate for each circumstance. [3 marks]

i. A device which converts analogue data to digital data. _____

ii. A device capable of converting analogue data to digital data and vice-versa. _____

ii. A device which converts digital data from the computer to analogue data. _____

6. This question is about Number Conversions. [12 marks]

Complete the following table by performing the required number conversions.
Show all your working in the space provided.

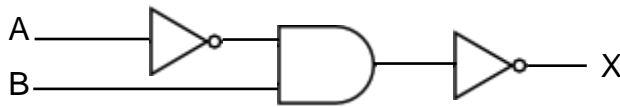
Decimal	Binary	Hexadecimal
201 ₁₀		
	101 1110 ₂	
		F1 ₁₆

Space for working

7. This question is about Boolean Expressions.

[4 marks]

Write down the **Boolean Expression** for the logic circuit shown below.

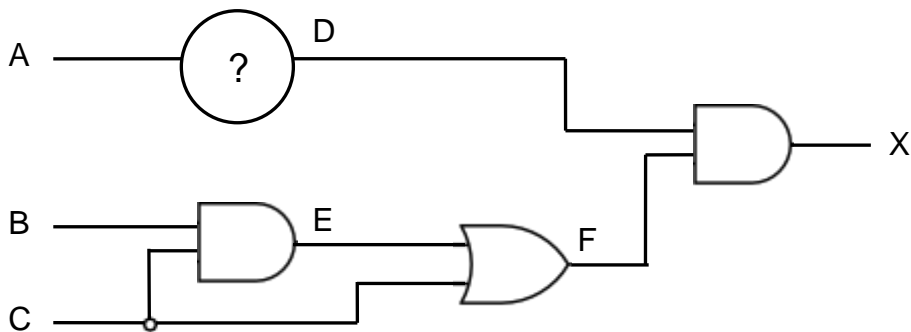


Boolean Expression: _____

8. This question is about Logic Circuits.

[7 marks]

Following is an incomplete logic circuit.



a. What is the name of the **missing logic gate**? _____ [1 mark]

b. Fill in the empty spaces. [2 marks]

i. An AND gate outputs _____, when all the inputs are 1.

ii. An OR gate outputs 0 when all inputs are _____.

c. Complete the truth table for the above logic circuit. [4 marks]

A	B	C	D	E	F	X
1	1	1	0			
1	1	0	0	0	0	0
1	0	1		0	1	
1	0	0		0	0	
0	1			1	1	1
0	1	0	1		0	
0	0	1	1			
0	0		1	0	0	

9. This question is about System Utilities.

[8 marks]

Who am I? *Names of specific application software are not accepted.*

- a. I can detect and remove computer infections.
- b. I can contain a number of files and sub-directories.
- c. I help you to see how your folders are organised.
- d. I improve the performance of your computer by reorganising files which have been split up into contiguous locations.
- e. I check the disk for physical errors.
- f. I can take different formats such as .doc, .xls and .exe.
- g. I can reduce the size of folders to take less space on the hard disk.
- h. Remember to do a backup before using me as I delete all data.

10. This question is about Databases.

[10 marks]

- a. What is the difference between a **Database** and a **DBMS**?

[2 marks]

- b. The following table has been created to keep students' records. Write down an appropriate data type for each field.

[2 marks]

Field name	Data type
i. Name	
ii. Date of Birth	
iii. Age	
iv. Male?	

- c. Write down a field which can be set as a primary key for the above Students table.

[1 mark]

d. What is a relationship? Mention two types of relationships. [2 marks]

Definition: _____

Types of relationships:

e. The user of this database wants to create a query to output a list of all students whose **name starts with the letter J** and who are **older than 13 years**.

The following screenshot shows the query in Design View. It is noted that the user did not fill up the criteria. Can you help him fill in the criteria section based on the query specified above? [2 marks]

Students whose name starts with J and are older than 13 : Select Query

Students

Name
Date of Birth
Age
Male?

Field:	Name	Date of Birth	Age	Male?
Table:	Students	Students	Students	Students
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

f. What is a Report? [1 mark]

END OF EXAM