



KULLEĠĠ SAN BENEDITTU

Boys' Secondary, Kirkop

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| Mark |
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HALF-YEARLY EXAMINATION – 2012/2013

Track 3 (JL)

FORM 3

COMPUTING

TIME: 1h 30min

| | | | | | | | | | |
|-------------|----|----|----|----|---|---|----|----|--------------------|
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Global Mark |
| Max. Mark | 12 | 18 | 18 | 20 | 5 | 5 | 10 | 12 | |
| Mark | | | | | | | | | |

Instructions to students:

Answer ALL questions.

*Calculators are **NOT** allowed; Good English and orderly presentation are important.*

Read carefully each question

DO NOT WRITE ABOVE THIS LINE

Name: _____

Class: _____

1. This question is on types of computers.

[12 marks]

- a. Use numbers between 1 and 5 to order the types of computers according to their speed. (Note: 1 refers to the fastest and 5 refers to the slowest). [5]

| Microcomputer | Minicomputer | Supercomputer | Microcontrollers | Mainframe |
|---------------|--------------|---------------|------------------|-----------|
| | | | | |

- b. Give *four* examples of different types of *microcomputers*. [2]

| | |
|--|--|
| | |
| | |

- c. Mention *two* devices which have a *microcontroller* in them. [1]

| | |
|--|--|
| | |
|--|--|

- d. State *TWO advantages* and *TWO disadvantages* of using a laptop rather than a desktop computer. [4]

Advantage 1: _____

Advantage 2: _____

Disadvantage 1: _____

Disadvantage 2: _____

2. Figure A below shows an advert of a particular laptop.

[18 Marks]

| |
|--|
| <p>Acer Aspire Windows 8 Laptop</p> <p>Processor: Intel Core i7-3517U 1.9 GHz Memory: 6GB DDR3 Hard Drive: 1TB Solid-State SATA Screen Size: 15.6 inches Max Resolution: 1366 x 768 Video Card: NVIDIA GeForce GT 640M Dedicated Graphics Memory: 1 GB DDR5 Optical Drive: DVD Super-Multi Drive Card Reader: Yes Wi-Fi: Yes Webcam: Yes Bluetooth: Yes OS: Windows 8 Home Edition 64bit</p>  |
|--|

Look carefully at figure A and complete the following: [4]

a. Write down the **CPU type**:

b. Write down the **CPU speed**:

c. Write down the **amount of RAM**:

d. Write down the **Hard disk space**:

Figure A

e. What is RAM used for?

_____ [1]

f. What is ROM used for?

_____ [1]

g. What do you understand by the terms **volatile** and **non-volatile**?

_____ [2]

h. Which of these terms (volatile / non-volatile) applies to ROM?

_____ [1]

i. Mention another characteristic of ROM which differentiates it from RAM.

_____ [1]

j. Write numbers (1-6) to order the following from the smallest (1) to largest (6). [3]

| MB | TB | Byte | GB | KB | Bit |
|----|----|------|----|----|-----|
| | | | | | |

k. State whether these storage devices are Optical, Magnetic or Electronic. [3]

| | | | |
|---------------|--|-----------|--|
| Micro SD card | | Hard Disk | |
| Floppy Disk | | DVD | |
| CD | | Pen Drive | |

l. Explain the difference between SERIAL and DIRECT access. [2]

3. This question is on the CPU and I/O subsystem. [18 marks]

a. Draw a **diagram** which illustrates the main units of a computer system. Use all the words provided and also show the **directions of data flow** between the components. [9]

| | | | |
|--------|-------------------|-----|---------------|
| Output | Secondary Storage | ALU | I/O Subsystem |
| CU | MU | | Input |

- b. What do these abbreviations stand for? [3]
- i. ALU _____
 - ii. MU _____
 - iii. CU _____

- c. Write a short description on these abbreviations. [6]
- i. ALU _____

 - ii. MU _____

 - iii. CU _____

4. This question is on Hardware and Software. [20 marks]

- a. Distinguish between Hardware and Software. [2]
- _____
- _____
- b. Give an example of Hardware. _____ [0.5]
- c. Give an example of Software. _____ [0.5]
- d. What do you understand with the term System Software? [2]
- _____
- _____

e. What are output devices? [1]

f. Write three output devices. [3]

_____, _____, _____

g. Three types of printers are the Dot Matrix, Inkjet and Laser printers. [5]

i. Which of these printers is an impact printer? _____

ii. Which printer prints character by character? _____

iii. Which printer prints page by page? _____

iv. Which printer is the cheapest? _____

v. Which is the fastest printer? _____

h. What is a plotter and what is it used for? [2]

i. Mention a device which is considered to be both an input and an output device. [1]

j. A short distance along the road from where I live there is a special school for children with disabilities. Many of these children cannot use the input and output devices that most of us use. [3]

i. Give an example of a **special input device** used by a **blind** child.

ii. Give an example of a **special output device** used by a **blind** child.

iii. Give an example of a **special input or output device** used by a child who cannot use his arms.

5. Five generations are recognized in the development of computers. State ONE type of computer component for every generation. Choose from below: [5 marks]

| | | | | |
|----------------------------|--------------------------------|--------------------|------------------------|---------------------|
| <i>Integrated Circuits</i> | <i>Artificial Intelligence</i> | <i>Transistors</i> | <i>microprocessors</i> | <i>Vacuum tubes</i> |
|----------------------------|--------------------------------|--------------------|------------------------|---------------------|

| | |
|----------------------------|--|
| First Computer Generation | |
| Second Computer Generation | |
| Third Computer Generation | |
| Fourth Computer Generation | |
| Fifth Computer Generation | |

6. This question is on Health and Safety. [5 marks]

a. List *three* health problems linked to using the computer for long periods of time.

Health Problem 1: _____ [1]

Health Problem 2: _____ [1]

Health Problem 3: _____ [1]

b. Tick with a the correct answer.

i. What is ergonomics? [1]

- Ensuring that the hardware is reliable and won't break down
- Making sure that you don't have an accident at work
- The science concerned with designing safe and comfortable equipment for humans

ii. Which of the following statements is NOT a health and safety issue in a working environment? [1]

- There should be no trailing wires
- All hardware should be in perfect working order
- Electrical sockets must not be overloaded

7. This question is on Database.

[10 marks]

- a. Fill in the spaces in the paragraph on next page by using the words from the following list: [5]

| | | | | |
|---------------|-----------------|---------------|------------------|---------------|
| <i>sort</i> | <i>database</i> | <i>item</i> | <i>utility</i> | <i>file</i> |
| <i>record</i> | <i>backup</i> | <i>fields</i> | <i>Key field</i> | <i>search</i> |

In a hospital, a _____ for each patient is kept in a patient-record _____. One of the _____ in each record contains the patient's surname, e.g. GALEA. GALEA is called an _____ of information. Each patient has a unique patient-number which is used as the _____ when a _____ is undertaken for the details of a particular patient. The entire file is called a _____. When the records are required in alphabetical order, the surname field is used by a _____ program, sometimes known as a _____. A _____ copy of the file is made for security against accidental loss.

- b. What do you understand with the term **Primary key** or **Key Field**? [1]

- c. Explain the meaning of the following terms and why these are used in a database: [4]

i. Form

ii. Query

8. This question is on Computer Logic. Convert the following: [12 marks]

Show your working and answers below:

| Binary | Decimal | Hexadecimal |
|----------|---------|-------------|
| 10101100 | | |
| | | BE |
| | 168 | |

Space for working

END OF EXAM