

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA

SECONDARY EDUCATION CERTIFICATE LEVEL

SEPTEMBER 2017

SUBJECT:	Information Technology
PAPER NUMBER:	Synoptic – Unit 1
DATE:	1 st November 2017
TIME:	10:00 a.m. to 12:05 p.m.

**THIS PAPER SHOULD BE RETURNED TO THE INVIGILATOR
AFTER THE EXAMINATION.**

Scenario

A local taxi company wants to make use of the latest technology for its business by storing details about the employees, taxis and clients. The company also wants to develop an application where clients can book taxis online.

Question 1**K1 (7 marks)**

This is a list of computer systems which are available:

supercomputer, cluster, desktop computer, tablet, smartphone, gaming rig, embedded device

- a. Which one of these computers is the most adequate to store all required data?

_____ (1)

- b. List **TWO** different characteristics of gaming rigs and desktop computers.

_____ (2)

- c. The company owner wants to be able to check any taxi activity from wherever s/he is. Which device is best used for this?

_____ (1)

- d. Which device has the smallest physical size?

_____ (1)

- e. Which device would be too expensive to use in this scenario?

_____ (1)

- f. Cluster computing refers to several computers working on a task together. Is this statement true or false?

_____ (1)

Question 2

K2 (6 marks)

a. Describe **TWO** uses for a tablet.

(2)

b. Describe **ONE** area where a supercomputer might be used.

(1)

c. This question is about wearable computers.

i. Name a wearable computer.

(1)

ii. Describe **ONE** use for the named wearable computer.

(2)

Question 3

C1 (4 marks)

The taxi company wants to hire a web designer to design their website and occasionally prepare flyers. A laptop with a reasonable price to performance ratio must be bought for this purpose. The laptop must also run any Windows software the owner already has. A local shop has the following laptops available.

Model	C730E	GP62	GT73
CPU	Celeron 2.16Ghz	Intel Core i7 2.6Ghz	Intel Core i7 2.7Ghz
Storage	16GB SSD	1TB HDD + 128GB SSD	1TB HDD + 512GB SSD
Memory	4GB DDR3	8GB DDR4	32GB DDR4
Screen Size	11.6 Inches	15.6 Inches	17.3 Inches
Video Card	Intel HD Graphics	Nvidia GTX 960MB	Nvidia GTX1080
Operating System	Chrome OS	Windows 10	Windows 10
Price	€290	€1110	€3584

a. Which model is best for this purpose? Write the model name below.

_____ (1)

b. Mention **THREE** reasons to justify the model chosen in the previous question.

Reason 1:

 _____ (1)

Reason 2:

 _____ (1)

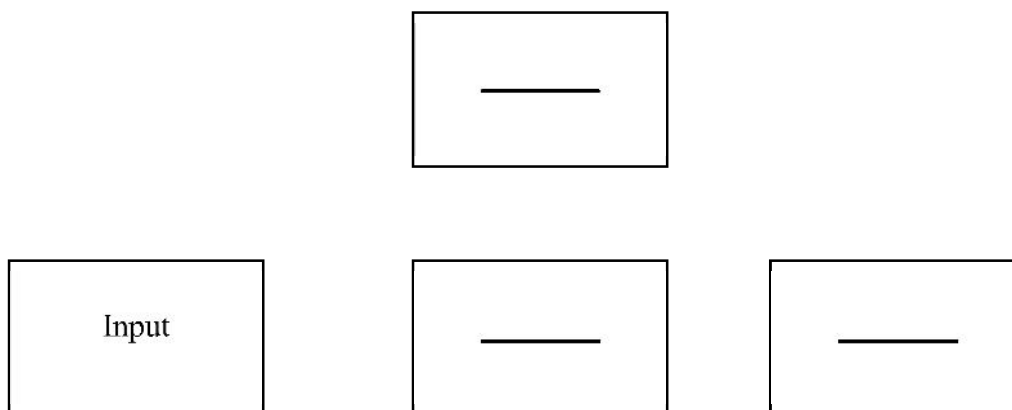
Reason 3:

 _____ (1)

Question 4

K3 (7 marks)

The following represents an incomplete data flow diagram of a computer system. Label the remaining components and draw arrows representing the flow of data between the components.



Question 5

K4 (3 marks)

a. Before computers are installed, one must be sure that they support Windows 7 64bit. Identify the option that has the minimum requirements to install Windows 7 64bit.

	Option A	Option B	Option C
Processor Speed	1GHz or faster 64-bit	512Mhz	2.5Ghz or faster 64-bit
Memory	2GB RAM	1GB RAM	8GB RAM
Storage Space	20GB	10GB	120GB
Graphics	DirectX 9 graphics device	DirectX 9 graphics device	DirectX 9 graphics device

Write the correct option underneath.

_____ (2)

b. A new PC has two drives, a 128GB SSD and a 1TB HDD (mechanical disk). On which drive should Windows be installed in order to increase performance?

_____ (1)

Question 6**K5 (5 marks)**

Peripheral devices will also be needed in the new system. Select the most appropriate device from the following list for each situation below.

Braille keyboard, optical disk drive, monitor, flash drive, printer, optical character reader, 3D scanner, eye tracking system, barcode reader

- a. The company has an employee who is blind and must be able to use the computer.

_____ (1)

- b. The company has various old printed documents that need to be stored on the computer and may be edited as well.

_____ (1)

- c. Some employees need to back up their work to DVDs.

_____ (1)

- d. Some data should **not** be sent by email but still needs to be copied from one computer to another.

_____ (1)

- e. Clients may present a voucher with a barcode on it to book a trip.

_____ (1)

Question 7

C2 (6 marks)

Discuss how the following components can affect the overall performance of a computer.

a. Graphics Card

(2)

b. CPU

(2)

c. RAM

(2)

Question 8

A1 (18 marks)

A guide must be prepared to help users install Windows 7 from a DVD on their computers.

- a. Put the following steps in the correct order by writing a number next to each step. The first one has been done.

Order	Step
	Find the boot options menu in the BIOS
	Set the DVD drive as the first boot device
1	Turn on the PC
	Save the BIOS settings and exit
	Enter the computer BIOS
	Start the computer from the Windows 7 disc

(5)

- b. After Windows 7 setup is started and all the files are copied, some configuration steps must be done before booting into Windows. Write TRUE or FALSE next to each step.

Step	TRUE / FALSE
Install an antivirus	
Enter a username	
Set up a malware application	
Change the windows theme	
Choose the regional settings	
Name the computer	
Install drivers	
Enter the product key	
Enter a password	

(9)

c. Give **FOUR** examples of utility software found in Windows 7.

(4)

Question 9

K6 (4 marks)

The computers in the new system will be connected together. The company owner has some problems understanding basic networking terms. Outline the following terms to help him/her understand.

a. Network Interface Card (NIC)

(1)

b. Optical cable

(1)

c. Router

(1)

d. Bluetooth

(1)

Question 10

C3 (8 marks)

The new system is now in place. The company has 6 PCs and 3 laptops. The PCs must access a private network accessible only from the office, and they must also be able to access the Internet. The laptops must have access to the Internet only. Guests waiting in the office can have access to Internet as well.

Answer the following questions based on this scenario.

a. Give an example of a LAN in this scenario.

_____ (1)

b. Explain if the LAN should make use of wired or wireless technology for optimal security.

_____ (2)

c. Give an example of a WAN in this scenario.

_____ (1)

d. i. The owner has been advised to use strong passwords even for guest access. Mention **ONE** justification for such an advice.

_____ (1)

ii. The owner has also been advised to use repeaters in his network. In which scenario would such an advice be justified?

_____ (1)

e. The company offices are spread over two floors. What equipment should be used to ensure that all computers have adequate access to the Internet? Justify your answer.

_____ (2)

Question 11**K7 (4 marks)**

This question is about Windows user groups.

a. Describe **TWO** things that an Administrator account can do.

(i)

_____ (1)

(ii)

_____ (1)

b. Describe **TWO** things that a Guest account cannot do.

(i)

_____ (1)

(ii)

_____ (1)

Question 12**C4 (5 marks)**

a. State which type of Windows account should be assigned to the following people:

i. The company owner needs to have total access on the computer. S/he wants to be able to manage other people's accounts and change system settings.

_____ (1)

ii. Sometimes, clients might want to use a computer connected to the company's network. They **cannot** make any changes to the computer system.

_____ (1)

iii. All employees must be able to use their computer, install applications, and manage files found in their account. However, they **cannot** make any system changes.

_____ (1)

Please turn the page.

b. State which permissions must be given to a user to do the following:

i. allows the user to read, write, change, and delete files and folders;

_____ (1)

ii. allows the user to view a listing of files and folders.

_____ (1)

Question 13

A2 (12 marks)

Another guide is required to allow the company owner to add another limited user whenever it is required.

a. Which of these utilities (Control Panel, Internet Explorer, Account Information) must be opened first?

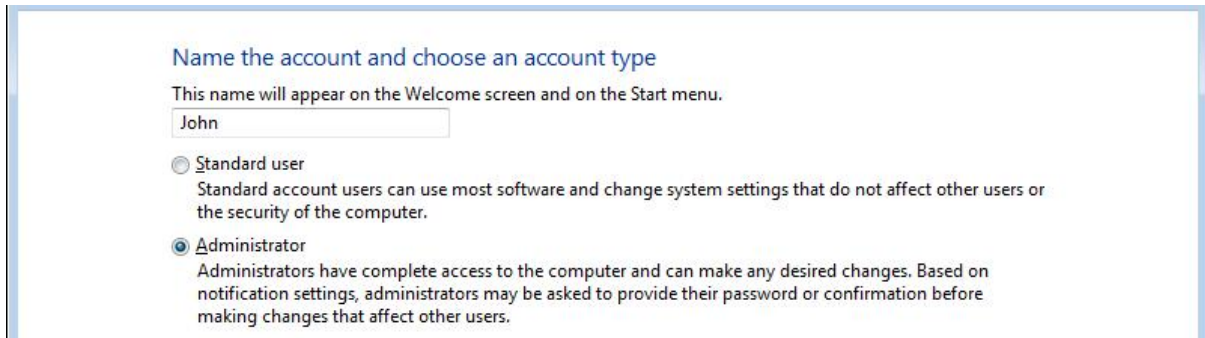
_____ (2)

b. Mark on the picture the option to be chosen to allow the creation of a user.



(2)

c. A limited user, John, is to be created. Explain whether the following settings are correct and if not what should be done.



(2)

d. Arrange the following steps in the correct order to share a folder.

Order	Step
	Click on Add
	Click on Share
	Choose Share With
	Choose the person from the drop down
	Right-click on Folder
	Choose Specific People

(6)

Please turn the page.

Question 14

K9 (4 marks)

a. Outline **FOUR** roles of the firewall.

Role 1:

(1)

Role 2:

(1)

Role 3:

(1)

Role 4:

(1)

Question 15

C5 (7 marks)

a. Explain the following threats:

i. Malware

(1)

ii. Denial of service

(1)

iii. Botnet

(1)

b. Explain the following protection measures:

i. Firewall

(1)

ii. Restore point

(1)

iii. Sand boxing

(1)

iv. Backup

(1)

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