D3 – USING ICT IN AN ORGANISATIONAL ENVIRONMENT
SOLUTIONS & MARKING SCHEME JUNE 2013

PART A.

Answer A1.

Define the term **SMARTCARD** and describe **TWO** types of smartcard. LO1 P229

A smartcard is a plastic card the size of a credit card with an integrated circuit built into it (1).
The TWO types of smartcard are:
Contact smart cards – these cards must be swiped through card readers (2)
Contactless smart cards – are read using low-powered lasers (2)

(Total 5 marks)

Answer A2.

Give and describe **THREE** safeguards that should be in place on a computer network to avoid illegal usage? LO2 P342

Examples include:
Cyber threats – denial of service, worms, viruses, etc (2)
Perpetrators of cyber mischief – Hackers and crackers (2)
Computer safety – via antivirus software, firewalls, passwords, etc (2)
3 * 2 to a max of 5

Answer A3.

List and describe the essential hardware components required for an Intranet.
LO3 P319

The following are the bare essentials:
Screen - self explanatory (2)
Printer - self explanatory (2)
File server - self explanatory (2)
Communication channel (2)
Input/Output devices (2)
3 * 2 to a max of 5

[Turn over]

Answer A4.

What is the **BOOT Process**, and why is the **BOOT Process** so important?
LO1 P122

Booting is the process of loading an operating system into a computer's main memory (2).
The process is essential since the memory will have 'died' when the machine was switched off. Also it has to access some software 'to put its brain into gear' so that it knows what to do before the OS is loaded (3).

(Total 5 marks)

Answer A5.

Define the term **ENCRYPTION** and why is **ENCRYPTION** so important when transferring data over the internet? LO4 P 472

Encryption is the process of altering readable data into an unreadable form (1) to prevent unauthorised access (2)
It gives confidence to customers and business (3).

(Total 5 marks)

Answer A6.

Define the terms **E-Business** and **E-Commerce** and the main difference between them. LO5 P 421

E-business is using the Internet to facilitate every aspect of running a business, whilst E-commerce is the buying and selling of products and services through computer networks (3).
The major difference is that E-business does not sell a product to customers whilst E-commerce does (2).

(Total 5 marks)

Answer A7.

Define the term **ETHICS** and describe why is **ETHICS** so important if the Information Technology field? LO6 P37

Ethics is defined as a set of moral values or principle that govern the conduct of an individual or a group (2)
It is so important since all concerned (users, client, etc) want to make sure that those using IT are not only not breaking any laws but also using IT with a social conscious (3) e.g. illegal copying

(Total 5 marks)

[Turn over]

Answer A8.

Cloud Computing is classified as an Emerging Technology.
Define the term and describe **TWO** reasons why a company would use Cloud Computing. LO5 P37

Cloud Computing is the obtaining of computer resources from the network of computers sitting in data centre someplace and paying only for what you use (2).
A simple response would be that they only pay for the resources they use. Also they do not have to worry about upkeep, physical security, obsolescence, serving, etc of the resources (3).

(Total 5 marks)

[Turn over]

PART B.

ANSWER B9.

a) Define the term Instant Messaging and describe its importance in a business environment. .

Instant messaging is when a person sends a message and almost instantly it arrives at the receiver, who is told of its existence (2). Its importance is that there is no delay (2).

b) Give and describe **TWO** benefits and **TWO** drawbacks of Instant Messaging. AC5.2 P86

Benefits:
Receiving the message 'immediately'. (4)
Can be sent to more than one person at the same time (4)
Etc (4)
Drawbacks:
Overload (4)
Lack of privacy (4)
Lack of common standards (4)
Time waster employee– junk messages (4)
Etc (4)
4 + 2*4 + 2*4 to a max of 20

ANSWER B10.

A CPU has two main components.
a) What are these two components and how do they work individually and together?

The two main components are:
The control unit – it deciphers each instruction stored in the CPU and then carries out the instruction (4).
The ALU – performs arithmetic operations and logical operations. It also controls the speed of those operations (4).

b) Registers and Buses are components that work closely with the CPU. Describe how they **BOTH** work and how they help the CPU to function. AC2.1 P208

Registers are high-speed storage areas that temporarily store data during the processing (4).

Buses are electrical data roadways through which bits are transmitted within the CPU and between the CPU and other components of the motherboard (4).
They help the CPU to function by allowing data and results to be stored before, during, and after processing. Also they are the mode in which data can be retrieved and information saved on disks etc (4).

ANSWER B11.

A legal requirement of any business using the internet is to protect the data they have stored from Identity Theft.

a) Define the term Identity Theft.

Identity theft is a crime in which thieves hijack your name and identity and your good credit rating to get cash or buy products (4).

b) Describe **FOUR** ways in which the Head of the IT Department can prevent the theft of data. AC6.2 P445/473

Any of the following are acceptable:
Pass cards to access the hardware and data etc (4)
Pin and password access the hardware and data etc (4)
Physical traits using biometrics (4)
Encryption (4)
Etc (4)
4 + 4*4 to a max of 20

ANSWER B12.

There are numerous ways in which an organisation can benefit from using a network.
Give and describe **FOUR** reasons why a network may be set up in a business. AC3.2 P316

Any of the following are acceptable:
Sharing of peripheral devices (4)
Sharing of programs and data (4)
Better communications (4)
Security of information (4)
Access to databases (4)
Improved competitiveness (4)
Etc (4)
5*4 to a max of 20

over]

ANSWER B13.

There are **THREE** basic types of systems software that are essential for a computer to function correctly.
a) What are the **THREE** components? (3)

The three components are:
Operating systems
Device drivers
Utility programs
NB. some may consider compilers/interpreters

b) Describe how they work individually **and** how they work together. (17) AC1.2 p 120

The three components are:
Operating systems – controls the system (4)
Device drivers – help the computer control peripheral devices (4)
Utility programs – they generally support, enhance or expand existing programs in a computer system (4)
N.B some may consider compilers/interpreters – convert source coding into machine code (4)
5 marks for original input as to how they function as a unit (5)
3+ 3*4 +5 to a max of 20

Matrix of D3 LOs and ACs

Assessment Criteria:		Question													
		A1	A2	A3	A4	A5	A6	A7	A8	B8	B9	B10	B11	B12	B13
LO1															
	AC1.1	Y			Y										
LO2	AC1.2														Y
	AC2.1											Y			
	AC2.2		Y												
	AC2.3														
LO3															
	AC3.1			Y											
	AC3.2													Y	
LO4															
	AC4.1														
	AC4.2					Y									
	AC4.3														
	AC4.4														
LO5															
	AC5.1						Y								
	AC5.2										Y				
	AC5.3								Y						
LO6															
	AC6.1							Y							
	AC6.2												Y		