

Name: _____

PPSN: _____



Quality and Qualifications Ireland

Computer Architecture & Systems

C20012

7th May 2014

10:00 - 12:00

Duration: 2 hours

Instructions:

1. Write your exam number on your answer book
2. Answer 10 questions from part A
3. Answer 2 questions from part B

You may not:

1. Calculators may NOT be used

This exam counts for 40% of the module

Computer Architecture & Systems 2014

CTI Senior College, Clonmel

Section A (20%)

Answer any ten questions. All questions carry equal marks (2 marks each). If you answer more than ten questions the best ten marks will be chosen.

1. What is the difference between **FTP** and **FTPS**, and why is the difference important?

FTP=File Transfer Protocol; FTPS is same but S=Secure; difference important because data is encrypted with FTPS.

2. What do the letters **RGB** stand for, and where are they used?

RGB=Red, Green, Blue; used when describing colors on screen.

3. Write these file sizes in *increasing* order:

2GB 12K 99Bytes 500MB

99bytes, 12K, 500MB, 2GB

4. Convert the binary value **0100 0011** into decimal.

$67 = 0 + 64 + 0 + 0 + 0 + 0 + 2 + 1$

5. What is a **LAMP** 'stack' and what is it used for?

Linux, Apache, MySQL, Perl/PHP; describes the software on a 'standard' internet server for web-apps.

6. What is **TCP/IP** and where is it used?

Transmission Control Protocol over Internet Protocol, this is the networking protocol used on the internet

7. What is **USB** and what is it used for?

USB=Universal Serial Bus, used to connect peripherals to computers

8. What is the Unix command to change file permissions? Give one example of when you might need to do this.

chmod to change file permissions, necessary to mark a file as executable, or to restrict access to a file

9. Write a note on the Data Protection Act, outlining 4 of your main rights.

Suggested 4 rights include: right to data security, right to view data, right to amendment if data wrong, data only used for purpose obtained

10. List two *advantages* of email over traditional mail.

Faster, cheaper

11. Who is the Unix super-user? State one advantage of being super-user.

Root is the super-user; super-user can do anything/everything in system

12. List two different types of devices that can be used for backups. Give one advantage and one disadvantage of each.

Tape drive: disadvantage: expensive; advantage: reliable, good capacity

Memory stick: advantage: cheap, easy to use; disadvantage: easily lost/stolen

Section B (20%)

Answer any **two** questions. All questions carry equal marks (10 marks each). If you answer more than two questions the best two marks will be chosen.

1. (a) Discuss common software requirements for a small office, listing the applications used, their purpose and what a business might use them for.

Learner should first describe what type of office they have in mind, list common programs in use, list features of the programs with examples of their use. Eg Spreadsheets to track costs and expenditure; word processor to write business documents; Browser for internet research; email for communications etc. Learner should show that they can list common software packages and identify their common uses.

8 marks

(b) Name two common types of software which are available both for Linux and Microsoft Windows, and with which you are familiar. Write a brief note on each.

Learner may list any two software packages, including ones already mentioned in part (a), as long as both are available for Linux/Windows. Eg, FileZilla, LibreOffice, kwrite (plain text editor), GIMP (image editor).

2 marks

2. (a) Discuss the main decisions to be made when buying a home computer for general use. List 4 main components you'll need to consider, *excluding* peripherals. Write a detailed note on each to explain its function, giving an example of its use, and considerations when purchasing.

Learner should list and then discuss 4 components in a computer, explaining the function of each one, and considerations when purchasing;

eg. Hard-drive: consider cost vs capacity, as well as speed of operation and likelihood of becoming full; used to store documents, images, audio etc; essential for all operations of the computer, with significant impact on system performance as it can be used for virtual memory, as well as for secondary storage.

Other components include CPU, RAM, Monitor, DVD-ROM, Graphics Card etc.

8 marks

(b) Write a note about 2 different peripherals you may also require, explaining their use.

Learner should list any two peripherals, stating what they're used for; eg, printer: used to generate hard-copy of documents assembled on screen, print reservations slips, receipts, artwork etc.

2 marks

3. (a) Explain in detail how a web page gets from a server to a client computer. Draw a diagram to illustrate and explain any terminology you use.

Learner should draw diagram indicating client and server, cloud for internet, router/gateways between network and internet. Should illustrate the use of sequence numbers on packets of data, to allow re-assembly on receiving end, mentioning how packets may not all travel same route between server and client. Mention should be made of Domain Name System (DNS) to allow client to identify network address of server from name of website.

8 marks

(b) Who invented http/html and when did she or he do so?

Invented by Tim Berners-Lee in 1989/1990 (either date acceptable) as means of more easily accessing documents on other computers.

2 marks