FETAC
Further Education and Training Awards Council
Comhairle na nDámhachtainí Breisoideachais agus Oiliúna

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Computer Architecture & Systems C20012

April 2012

Duration: Two Hours

INSTRUCTIONS TO CANDIDATES:

*Answer any **ten** questions from Section A*
*Answer any **two** questions from Section B*
All questions in each section carry equal marks
Return this exam paper when finished along with your answer book

This written exam counts as 40% of the total module

NAME (PRINT):_____
PPS NUMBER:_____
DATE:_____

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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. How many Megabytes are in a Terabyte?
2. What is the **ALU** and what does it do?
3. Convert the binary value **0011 0110** into decimal.
4. What is cache RAM and what is it used for?
5. What do the letters **RGBA** stand for?
6. Where is the instruction pointer and what does it do?
7. What is the difference between **FTP** and **SFTP**?
8. What is the purpose of the Data Protection Act? Outline two provisions of the Act.
9. What is the name of the Unix superuser? What is the inherent danger of being the superuser as distinct from any other user?
10. What is the Unix command to make a file executable?
11. List two benefits of email over traditional mail.
12. What is the primary difference between serial and parallel devices? Give an example of each device.

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) Name one internal and one external bus. Discuss the purpose of each one and give examples of devices that can be connected to each.

4 marks

(b) Describe and discuss the steps you would follow to provide internet connectivity as well as a reliable wireless signal in a small office. Ensure you:

- List any hardware, software and services that are required.
- List other key issues that you feel would have to be considered.

6 marks

2. (a) List 4 common functions of a modern operating system. Discuss two of these in detail explaining how each function is achieved and the benefit to the user.

7 marks

(b) Many applications are developed under the Open Source model. List 3 of these that are freely available both for Linux and Microsoft Windows; then discuss them under the headings of:

- Benefit to an organisation of the software
- Ease of use
- Features and functions

3 marks

3. (a) Draw a block diagram of the main components on a computer motherboard; write a note on each item explaining its function, and what part it plays in normal operation of the computer.

8 marks

(b) Is the processor speed of the CPU alone a good indicator of system performance? If not, what might have a greater or equal effect on performance and why? Give your reasons.

2 marks