



(National Council for Vocational Awards)



Computer Architecture & Systems C20012

Theory Examination 2002

Duration: Two Hours

INSTRUCTIONS TO CANDIDATES:

Answer ten questions in Section A (25%)

Answer three questions from Section B (75%)

This written exam counts as 40% of the total module

Section A (25%)

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

1. How many megabytes are in a gigabyte? **1000 or 1024**
 2. What is the typical transmission speed of a modern modem? **56K**
 3. What is the function of the LINUX command **cp**? **Copy, duplicate**
 4. Apart from capacity, name another way to evaluate the performance of disks for storage. **Speed, access time**
 5. What is the purpose of the registry in the Windows range of operating systems? **Centralised system database**
 6. Convert the hexadecimal value FF to decimal. **255**
 7. What do the letters ISA stand for? **Industry Standard Architecture**
 8. Convert the binary value 0100 0101 to decimal. **69**
 9. What device is used to capture images from paper to computer? **Scanner**
 10. What is the function of virtual memory? **Larger programs, more memory**
 11. Name an advantage of zip disks over CDROM disks. **Rewriteable**
 12. List two advantages of inkjet printers over dot-matrix printers. **Quieter, colour, quality of output.**
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Section B (75%)

Answer any three questions. All questions carry equal marks. If you answer more than three questions the best three marks will be chosen.

- 1 Explain the difference between the laser, dot-matrix and plotter types of printers. Give an example of the application of each and where they might be used. **Toner, quality print, office; impact printer, billing, multipart stationery; draws by dragging pen, engineering drawings/CAD, engineers & designers offices.**

- 2 A computer is offered for sale with the following specification:

Intel Pentium 2.2Ghz
10GB Hard Drive
64MB RAM
4MB Video RAM
14" Colour Monitor
SoundBlaster Surround Sound
Harmon Kardon Speakers with Sub-Woofer
16X DVD ROM & CDRW
56K Modem

Is this computer suitable for gaming? If not state what components should be changed and suggest improvements. Explain the underlined items. **No. HDD, VRAM, Monitor; Any suitable suggestions; Digital Video/versatile disk, Read Only Memory, Compact Disk Re-writeable.**

- 3 (a) Explain how a mechanical mouse works. Draw a diagram.
Diagram

(b) Define the terms DMA and PIO. How does DMA speed up the operation of a computer? **Direct Memory Access, Processor Input/Output. DMA speeds up throughput by freeing CPU**

- 4 List the items required to connect a home computer to the Internet. Briefly outline the steps required to install and/or connect the items.
Hardware, software, phoneline ISP. Connect, install, test.
- 5 Write a description of the main components required to create a computer network. **Network Cards, cabling, hubs, software etc Discussion.**