

NATIONAL UNIVERSITY OF IRELAND, GALWAY  
OLLSCOIL NA hÉIREANN

SUMMER EXAMINATIONS 2000

First University Examination in Arts

INFORMATION TECHNOLOGY (CT100)

Second Paper

Prof. D. Bell  
Dr. G. Lyons  
Ms. S. Hughes

Time allowed: THREE hours

**Answer any THREE questions**  
**All questions carry equal marks**

1. (i) What are the common types of computer viruses? Give examples of some viruses and the effects they have.
- (ii) With respect to the Excel spreadsheet package, explain the terms *absolute addressing* and *relative addressing*. Illustrate your answers with examples.
- (iii) Databases may be set up on a spreadsheet such as Excel or can be set up in a fully-fledged database program such as Access. What factors should you consider when choosing between these two options?

**[33 Marks]**

2. (i) Outline the main differences between system software and application software.
- (ii) List and describe the four main systems software programs.
- (iii) What are the advantages and disadvantages of the Windows NT operating system compared to Windows 95/98?

**[33 Marks]**

**[P.T.O]**

3. (i) What is meant by the following Internet terms:
- Information Overload
  - IP Addresses
- (ii) In relation to the Internet, discuss the problems associated with each of the following:
- DNS Names
  - Bandwidth
  - Search Engines
- (iii) What is TCP/IP? Explain the use of *packets* in the context of TCP/IP.

**[33 Marks]**

4. (i) Explain why secondary storage devices are necessary.
- (ii) Define the following terms in the context of secondary storage: Formatting/initialising, WORM, CD-ROM, Disk Caching and Data Compression.
- (iii) List and explain the main types of data-storage devices available, highlight the advantages and disadvantages of the different storage media and give examples of computer applications that use them.

**[33 Marks]**

5. (i) Explain what is meant by each of the following:
- (a) simplex transmission
  - (b) fully duplex transmission
  - (c) serial and parallel transmission
- (ii) List the main types of LAN network topologies and, with the aid of sketches, briefly explain their operation.
- (iii) Explain what is meant by each of the following and explain their importance in a communication system:
- (a) Modems
  - (b) Communications channels

**[33 Marks]**