

Ollscoil na hÉireann, Gaillimh
National University of Ireland, Galway
Semester II Examinations 2004 / 2005

Exam Code(s) 1BF1
Exam(s) First Year BSc in Business Information Systems

Module Code(s) MS107
Module(s) Information Systems Technology

Paper No. 1
Repeat Paper

External Examiner(s) Professor G. Phillip
Internal Examiner(s) Professor J. F. Collins
 Mr. M. Scott
 Mr. S. Hill

Instructions: Answer **four** questions. All questions carry equal marks.

Duration 3hrs
No. of Pages 4
Department(s) Accountancy and Finance
Course Co-ordinator(s) Mr Tom Acton

Requirements:

MCQ
 Handout
 Statistical Tables
 Graph Paper
 Log Graph Paper
 Other Material

FIRST YEAR BUSINESS INFORMATION SYSTEMS EXAMINATION

MS107 INFORMATION SYSTEMS TECHNOLOGY

Time Allowed: **THREE hours**

Answer **FOUR** questions. All questions carry equal marks.

Q1.

- a) Two's complement notation is the most popular system for representing integers within today's computers. You are required to:
- i) Convert the negative decimal number -12 to two's complement notation using bit pattern of length 8.
 - ii) Using two's complement notation add the negative decimal number -7 and the positive decimal number 5

(10 Marks)

- b) The *operating system* (OS) consists of the master system of programs that manage the basic operations of the computer. Briefly discuss the following functions of an OS:

- i) Booting
- ii) User interface
- iii) I/O management
- iv) Secondary Storage management

(15 Marks)

Q2.

- a) Distinguish between application software and system software.
- b) "The latest generation of programming languages offer unprecedented functionality through sophistication in software design."

(5 marks)

Discuss this statement. In your answer you should clearly outline the different types of programming languages, recent advances in programming languages and the potential benefits for business organisations.

(20 marks)

Q3.

(a) In relation to the UNIX operating system, briefly describe, using examples where appropriate, the following:

- i) UNIX shell
- ii) The general form of UNIX commands
- iii) Directory structure
- iv) Absolute and Relative paths

(15 Marks)

(b) Define and describe the following terms in the context of an operating system process:

- i) Process
- ii) Process creation,
- iii) Process termination
- iv) Process states.

(10 Marks)

Q4.

(a) Write explanatory notes on **each** of the following network topologies:

- i) Bus topology
- ii) Star topology
- iii) Tree topology
- iv) Ring topology

(10 marks)

(b) Identify **three** types of guided transmission media and discuss the characteristics and relative advantages/disadvantages of each.

(15 marks)

Q5.

(a) With respect to Memory Management describe briefly **each** of the following:

- i) Dynamic Partitioning

- ii) Simple Paging
- iii) Simple Segmentation
- iv) Virtual Memory

(15 Marks)

- (b) Outline the workings of Cache Memory, highlighting the advantages of using cache memory and discussing the various kinds of cache.

(10 Marks)

Q6.

- (a) With regard to computer systems describe **each** of the following:

- i) System bus
- ii) Motherboard
- iii) Control Unit (CU)
- iv) Machine Cycle

(12.5 marks)

- (b) Due to volatility and limited size of main memory, most modern computer systems use additional memory – mass storage systems. In light of the above statement, discuss the following memory storage devices:

- i) Magnetic tape
- ii) Optical disks
- iii) Flash memory

(12.5 marks)

Q7.

Outline the evolution of the MS Windows operating system, describing the main features of the versions outlined below:

- (i) Windows 3.x
- (ii) Windows 95 / 98 / ME
- (iii) Windows NT
- (iv) Windows 2000
- (v) Windows XP
- (vi) Windows .NET

(25 Marks)