GX 0073

Ollscoil na hÉireann, Gaillimh
National University of Ireland, Galway

Semester 1 Examinations, 2005/2006

Exam Code(s) 2BA1

Exam(s) Second year BA

Module Code(s) CT242

Module(s) Technological Frameworks I

Paper No.
Repeat Paper Special Paper

External Examiner(s) Prof. S. McClean
Internal Examiner(s) Ms. P. Byrne
Dr. M. Madden

Instructions:

Answer question one and any two others

Duration 2 hours
No. of Answerbooks 1

Requirements:
Handout
MCQ
Statistical Tables
Graph Paper
Log Graph Paper
Other Material

No. of Pages 2
Department(s) Information Technology

1. (a) Explain the role and function of the data, address and control buses when two numbers are entered at the keyboard, added by a computer program and output to the screen. [30]

(b) Derive the logical operands NAND and XOR and draw truth tables to illustrate your answer. Why are these gates of particular importance to circuit design? [10]

2. (a) Distinguish between a compiler and an interpreter, stating the advantages and disadvantages of each to the programmer. [20]

(b) Explain the action of an encoder when used to convert from decimal to binary form. [10]

3. (a) Explain the principles of numbering systems, giving details of the use of binary and hexadecimal systems in computing. [10]

(b) The Information Society Commission have published a report which "...provide[s] a view of current thinking on the information society by those who have contributed to its analysis". Describe the opinions of one of the thinkers whose work you have read, and explain how you think this might be useful to policy making in Ireland. [20]

4. (a) Choose one of the following and describe briefly their contribution to early computing:
John von Neumann; Grace Hopper; Charles Babbage [10]

(b) Explain the following terms when used in computing systems:
multiplexor; ASCII; parity; ALU; flip-flop [20]

5. Write notes on two of the following topics, based on tutorial discussions:

- Health issues in the computerised workplace – whose responsibility?
- Use of the internet as a research tool
- How computing has changed the workplace
- The need for a code of ethics for software developers
- "Everyone is equal in cyberspace" [30]