

# Cork Institute of Technology

Bachelor of Engineering in Building Services Engineering

(National Diploma in Engineering in Building Services Engineering)

(NFQ – Level 7)

Summer 2005

## Electrotechnology – Paper 1

(Time: 3 Hours)

### Instructions

Answer FIVE Questions.

All Questions carry equal marks.

Examiners: Mr. S. Beljevic  
Dr. N. J. Hewitt  
Mr. T. Dunne

- Q1. (a) Using a sketch outline the theory in relation to charge separation in the storm cloud. (6 marks)
- (b) Explain what is meant by the term rolling sphere and why is it important when designing lightning protection system? (8 marks)
- (c) Outline and explain the most important factors taken into consideration for the lightning protection? (6 marks)
- Q2. Relative to the protective relay:
- (a) Name four general function of a relay. (4 marks)
- (b) Name at least five incoming signal to a relay. (4 marks)
- (c) Name four basic requirements that must be taken into account when designing the protection system, and briefly explain each of them. (8 marks)
- (d) Name at least four principals that must be taken into account when designing the protective relays. (4 marks)

# Past Exam Papers For Electrotechnology

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