

## 2006 Paper 3 Question 9

### Introduction to Security

- (a) Name *three* types of software vulnerability; give an example of each and a brief description of how each could be exploited. [9 marks]
- (b) Alice wants to attack Bob's computer via the Internet, by sending IP packets to it, directly from her own computer. She does not want Bob to find out the IP address of her computer.
- (i) Is this easier to achieve for Alice with TCP- or UDP-based application protocols? Explain why. [3 marks]
- (ii) For the more difficult protocol, explain *one* technique that Alice could try to overcome this obstacle and *one* countermeasure that Bob could implement in his computer. [3 marks]
- (iii) Name *three* functions that Alice's Internet service provider could implement to make it more difficult for Alice to achieve her goal? [3 marks]
- (c) In what way are TCP/UDP port numbers below 1024 special? [2 marks]