

## COMPUTER SCIENCE TRIPOS Part IB – 2019 – Paper 5

### 6 Computer Networking (awm22)

- (a) Provide *five* examples of resource-multiplexing in computer networks. In each case state the layer of the network stack where this takes place, which resource is multiplexed and the multiplexing mechanism. [2 marks each]
- (b) A relative has contacted you for help; they believe *the Internet is broken*. The fault turns out to be that a piece of network-protection software had installed a specific IP address entry for an (alternative) default DNS server.
- (i) What should have provided the correct DNS entry? [1 mark]
- (ii) By concentrating on how DNS is intended to work, describe why network applications may not work correctly. [3 marks]
- (iii) How would you diagnose this problem? [2 marks]
- (c) DNS substitution may also be used maliciously.
- (i) Outline how spyware might use an (alternative) DNS entry. [2 marks]
- (ii) Describe a network-centric method for overcoming such treachery. [2 marks]