

## COMPUTER SCIENCE TRIPOS Part IB – 2026 – Paper 5

### 3 Computer Networking (djg11)

- (a) A Fellow in a Cambridge college thinks they cannot connect to a database hosted in the Finance Office and suspects this is a matter of VLAN configuration.
- (i) What is a VLAN? [2 marks]
- (ii) Why might a College network use VLANs? [2 marks]
- (iii) Assuming it is a VLAN issue, should the network be reconfigured for this Fellow or is an alternative solution preferable? [2 marks]
- (b) Describe three feasible methods by which traffic per server can be balanced when multiple servers host a popular web domain such as `www.bbc.co.uk`. Each should operate in a different part of the overall system. [6 marks]
- (c) Which of the methods given in answer to Part (b) also balance load for individual objects on a web page? [2 marks]
- (d) Tunnelling is a repetition of one or more protocol layers on top of where they would normally sit, and is commonly used for home access to a work file server. Why is this used, and what are alternatives? Answer giving advantages or disadvantages. [6 marks]