



SEPTEMBER 2015

NETWORKS

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
- b) Answer any FIVE questions
- c) All questions carry equal marks. Marks for sections of questions are shown in []
- d) Mark allocation should determine the length of your answer and the time you spend on it. Generally, one mark is awarded for each valid point
- e) Ensure that you pay particular attention to words underlined, in CAPITALS or in **bold**. FEW OR NO MARKS will be awarded to any question where these are ignored
- f) Read all sections of any question before attempting any part of it
- g) No computer equipment, books or notes may be used in this examination

- 1.
 - a) Explain the difference between a LAN and a WAN and give an example of who might use EACH. [6]
 - b) Discuss ONE method of transmitting data between LAN devices. [4]
 - c) Discuss the benefits of Fibre Optic Broadband for organisations, for home users and for providers – give examples in EACH case. [6]
 - d) With reference to communications, define the term **bandwidth**. Explain why email and video-conferencing might need different bandwidths. [4]
- 2.
 - a) In a large organisation what are the tasks carried out by the network administrator in a typical month? [10]
 - b) Describe in detail the differences between viruses, malware and spyware. [10]
- 3.
 - a) Describe the differences between analogue and digital signals. Use diagrams to support your explanations. [6]
 - b) Explain the part a modem plays in transmitting data. [4]
 - c) Describe the role played by the multiplexer in transmitting data. [4]
 - d) Explain how data may be distributed over a network by means of packets. [6]
- 4.
 - a) Name and describe THREE types of LAN network topologies. Your description must include a clearly labelled diagram. [12]
 - b) List advantages and disadvantages of EACH type of network. [8]
- 5.
 - a) Three ways of identifying web pages are **URL**, **domain address** and **IP address**. Explain the differences between EACH of these and illustrate your answer with a labelled example of EACH. [4 each]
 - b) Discuss the advantages and disadvantages to an organisation of having a STATIC IP address. [8]
- 6. A local Art Society needs to have a 'web presence' to provide information for its members, attract new members and display the members' artwork. They are considering a website, a Facebook page or perhaps both.
 - a) Discuss the different features that are offered by a website and a Facebook page. [10]
 - b) List the advantages and disadvantages of EACH in relation to the Art Society. [10]
- 7.
 - a) In relation to websites, define the following:
 - i JavaScript
 - ii PNG
 - iii MP3
 - iv Flash player[2 each]
 - b) Explain what a **tag** is and give an example of a commonly used tag. [4]
 - c) CSS stands for Cascading Style Sheet. Describe a **CSS**. [2]
 - d) What are the advantages of using Cascading Style Sheets? [4]
 - e) What is meant by the term '**web safe colours**'? [2]

continued overleaf

8. Describe in detail FOUR possible security threats to networked computer systems. For EACH, explain what the threat actually does, how the threat can affect the current and future operation of an organisation, and what measures should be in place to prevent the threat. [5 each]