



BCS Level 4 Award in Network and Digital Communications Theory QAN 603/0703/1

Sample Paper

**Version 4.0
July 2020**

Change History

Any changes made to the sample paper shall be clearly documented with a change history log. This shall include the latest version number, date of the amendment and changes made. The purpose is to identify quickly what changes have been made.

Version Number	Changes Made
Version 1.0 September 2017	Document created.
Version 2.0 February 2018	Edit to title and formatting changes.
Version 3.0 July 2019	Major changes to questions to match Syllabus question weightings.
Version 3.1 August 2019	Minor tweak to question 4
Version 4.0 July 2020	Major changes to questions to match updated syllabus (V3.0). Paper size reduced to 20 questions. Title page, change history table and related syllabus section added.

Related Syllabus

This sample paper and answer key are related to the following syllabus:

**BCS Level 4 Award in Network and Digital Communications Theory Syllabus V3.0
March 2020**



BCS Level 4 Award in Network and Digital Communications Theory

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Sample Paper

Record your surname/ last/ family name and initials on the Answer Sheet.

Sample paper only. 20 multiple-choice questions – 1 mark awarded to each question. Mark only one answer for each question. There are no trick questions.

A number of possible answers are given for each question, indicated by either A. B. C. or D. Your answers should be clearly indicated on the Answer Sheet.

The pass mark is 13/20.

This is a sample examination paper only.

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This qualification is regulated by Ofqual (in England).

- 1 Media Access Control (MAC) is part of which OSI layer?
- A Network.
 - B Physical.
 - C Data Link.
 - D Transport.
- 2 Which of the following standards covers Ethernet protocols?
- A 802.3
 - B 802.11
 - C 802.1
 - D 802.6
- 3 When securely transferring data over a network, which of the following protocols would be **MOST** appropriate?
- A SMTP.
 - B SNMP.
 - C FTP.
 - D HTTPS.
- 4 When an interconnection device receives a frame of 62 octets what is likely to happen next?
- A The device drops the frame.
 - B The device forwards the frame.
 - C The device returns the frame to sender.
 - D The device adds 8 octets and re-transmits it.
- 5 Which of the following error control techniques **COULD** give a false-positive result?
- A Checksum.
 - B CRC.
 - C Parity.
 - D Redundancy.

- 6** In which of the following scenarios would it be preferable to use static routing?
- A** Where redundancy is a priority.
 - B** Routing to a stub network.
 - C** In a large constantly changing network.
 - D** Routing across a WAN.
- 7** Which of the following is a disadvantage of using the OSPF protocol?
- A** Hierarchical protocol.
 - B** Processor intensive.
 - C** Uses multicasting.
 - D** Single copy of routing information.
- 8** Why does contention in a network cause a slow response for users?
- A** Networks are limited to a specific number of connections.
 - B** Causes data packets to be dropped.
 - C** Causes data to be corrupted.
 - D** Data has to be retransmitted.
- 9** Which of the following describes the effect of contention on network performance?
- A** Increases speed of connections.
 - B** Increases data integrity.
 - C** Causes data loss.
 - D** Latency is increased.
- 10** By limiting the use of file-sharing applications and prioritising VoIP traffic, what are a network team implementing?
- A** Route-based traffic shaping.
 - B** Application-based traffic shaping.
 - C** Presentation-based traffic shaping.
 - D** Frame-based traffic shaping.

- 11 Which of the following protocols is used for network management?
- A SMTP.
 - B TCP / IP.
 - C SNMP.
 - D UDP.
- 12 What is the name of the procedure that is used by TCP to establish a connection before transmitting data?
- A Datagram exchange.
 - B DNS query and response.
 - C Three-way handshake.
 - D Negotiation of parameters.
- 13 A multicast transmission of Ethernet frames can be described as which of the following?
- A A many-to-many transmission between sender and receiver.
 - B A many-to-one transmission between multiple senders and one receiver.
 - C A one-to-many transmission from a single source to every communicable device.
 - D A one-to-many transmission from a single source to a select group of devices.
- 14 The NIC at one end of a cable run detects more collisions than at the other end resulting in a loss of packets. What is the **MOST LIKELY** cause?
- A Synchronisation in simplex mode.
 - B A mismatch in speed settings.
 - C The NIC being set to a speed above its maximum.
 - D An incorrect IP gateway setting.
- 15 Which of the following is an advantage of static routing?
- A Scalability.
 - B Resilience.
 - C Low processor overhead.
 - D Easy to update.

- 16 Which of the following is **NOT** a feature of IS-IS routing?
- A It uses link state routing and exchanges topology messages with neighbours.
 - B IS-IS can provide optimum routes in a similar way to OSPF.
 - C IS-IS end systems request terminology updates from other end systems.
 - D It uses a cost metric which does not account for different media types.
- 17 Which of the following is an advantage of using the OSPF protocol?
- A Low link overhead.
 - B Low processing requirement.
 - C Path consistency.
 - D Low memory usage.
- 18 A network technician has increased the router's buffer size and amended some firewall rules. What is a potential outcome of the change?
- A Jitter has increased causing quality issues.
 - B SSL visibility devices are now bypassed and can be removed.
 - C There is more bandwidth available for streaming.
 - D The network can cope with more users.
- 19 A local network is struggling with poor wireless connectivity due to other signals in the area. How **COULD** this be fixed?
- A Hiding the wireless SSID and beacon interval.
 - B Adjusting the access point radio channel.
 - C Upgrading the LAN link from Cat5e to Cat7.
 - D Implementing RADIUS authentication.
- 20 What is benefit of using VLANs when trying to improve network performance?
- A Smaller broadcast domains.
 - B Smaller broadcast packets.
 - C Fewer broadcast domains.
 - D Fewer switch configuration changes.

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