# BCS Level 4 Certificate in Network Principles
# QAN 603/0548/4

## Specimen Paper A

Record your surname / last / family name and initials on the answer sheet.

**Specimen paper only 20 multiple-choice questions** – 1 mark awarded to each question. Mark only one answer to 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.

Pass mark is 13/20.

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**This qualification is regulated by Ofqual (in England).**

**1**  What is the decimal equivalent of 10101010?

**A**  156.
**B**  170.
**C**  192.
**D**  200.

**2**  Which of the following is the **BEST** description of a LAN?

**A**  A virtual private network.
**B**  An encrypted internet connection.
**C**  An unencrypted internet connection.
**D**  A network over a small area.

**3**  Which protocol is used to map IP addresses to physical MAC addresses?

**A**  CSMA/CD.
**B**  Telnet.
**C**  ARP.
**D**  UDP.

**4**  How do network clients use broadcasts to facilitate MAC to IP address mapping?

**A**  Broadcasts are used for all IP address.
**B**  Broadcasts are not used for mapping.
**C**  Broadcast are used for uncached addresses.
**D**  Broadcast are used over WAN links.

**5**  In a RIPv2 network, which algorithm does RIP use to calculate the **BEST** path between networks?

**A**  Bellmann-Ford.
**B**  Diffie-Hellman.
**C**  DUAL.
**D**  Dijkstra.

**6**    A byte is a combination of how many bits?

**A**    4.
**B**    6.
**C**    8.
**D**    32.

**7**    A customer has a Class B address allocation of 134.104.0.0 and wishes to further divide this into 16 subnets for use across departments. What subnet mask should be used to achieve this?

**A**    138.172.0.16
**B**    255.255.16.0
**C**    255.255.240.0
**D**    255.255.255.16

**8**    Which dynamic routing protocol uses Dijkstra's algorithm to calculate the route between networks?

**A**    RIPv1.
**B**    EIGRP.
**C**    RIPv2.
**D**    OSPF.

**9**    Which of the following would **BEST** describe a MAN?

**A**    A local network used to connect Bluetooth devices.
**B**    Many LANs connected to provide global networking.
**C**    Many LANs connected in the same region.
**D**    A local network used to connect wireless devices.

**10**    What service is designed to assign IP addresses to nodes on a TCP/IP network during initialisation?

**A**    Telnet.
**B**    PING.
**C**    Netstat.
**D**    DHCP.

**11** How does encapsulation facilitate data communication?

**A** Embeds PDU from higher OSI layers into lower ones.
**B** Embeds PDU from lower OSI layers into higher ones.
**C** Encrypts PDU from higher OSI layers into lower ones.
**D** Encrypts PDU from lower OSI layers into higher ones.

**12** What is the maximum decimal number that can be represented in 8 binary bits?

**A** 248.
**B** 254.
**C** 255.
**D** 256.

**13** Why would dynamic routing be used?

**A** To increase network resilience and reduce network administration.
**B** To reduce network loading by sharing traffic equally between routers.
**C** To reduce network administration by automatically storing the routing tables onto a single server.
**D** To allow the use of VPNs in networks where the number of spare IP addresses is limited.

**14** Which of the following are routing protocols?

**A** OSPF and TCP.
**B** RIP and UDP.
**C** TCP and UDP.
**D** OSPF and RIP.

**15** Which port would be opened on a firewall to allow HTTP access to a web server?

**A** 25.
**B** 53.
**C** 80.
**D** 88.

**16**    A network engineer monitors the company network and notices a bottleneck on the VoIP switch. Which network characteristic is affected?

**A**    Quality of service.
**B**    Default gateway.
**C**    Security.
**D**    DHCP.

**17**    What media is used to access wireless devices from a wireless access point?

**A**    Infrared.
**B**    Radio waves.
**C**    Visible light.
**D**    Copper cable.

**18**    What is the network IP address of 172.16.150.1 if the subnet mask is 255.255.248.0?

**A**    172.16.140.0
**B**    172.16.144.0
**C**    172.16.148.0
**D**    172.16.150.0

**19**    What is the maximum number of hosts allowed on subnet 172.30.100.0/22?

**A**    258.
**B**    510.
**C**    522.
**D**    1022.

**20**    Which of the following is a characteristic of VLSM?

**A**    The same number of addresses is used in each subnet.
**B**    It provides a more efficient use of addresses.
**C**    The subnet mask is the same for each network.
**D**    VLSM encourages wasted IP addresses on a network.

**-End of Paper-**