

BCS Level 4 Award in Network  
Answer Key and Rationale – QAN 603/2892/7

Question	Answer	Explanation / Rationale	Syllabus Sections
1	D	A Local Area Network (LAN) is a network over a small geographical area, typically one building or site. A server and resources will typically be shared between groups of computers within a LAN.	3.2
2	C	Class B default subnet mask is 255.255.0.0, also written as /16, so to divide the Class B network into 16 subnets it needs to move the network portion of the mask 4 bits to the right and make it /20 or 255.255.240.0.	6.1
3	D	Dynamic Host Configuration Protocol's (DHCP) main purpose is to automatically assign IP addresses. Telnet is an application that allows insecure command line connection, such as Linux systems or network devices. PING is used to check a remote IP address is accessible and Netstat displays the current network connections and network statistics.	6.1
4	D	OSPF, RIP are two well-known routing protocols. TCP and UDP by contrast are Transport layer protocols.	3.1
5	A	Switches are layer 2 devices which use VLANs to segment a network logically at layer 2. A router will break up networks into subnets at layer 3 this is a subnet not a VLAN. Hubs repeat traffic to all ports at the physical layer and therefore do not create any kind of network segmentation required for VLANs. A firewall is used to filter traffic and can be used to create DMZ layer 3 secure zones, these are not VLANs.	1.1
6	C	The 7 layers are Physical, Data Link, Network, Transport, Session, Presentation, Application.	2.1
7	B	A wide area network (WAN) is a network connected over a large geographical area.	3.2
8	D	UDP is a connectionless protocol. It sends a message, but it is connectionless and unreliable. TCP in contrast creates a connection. This involves a handshake with a remote system checking it is available and sending of a message to a local system instructing it to start sending data. The remote system constantly acknowledges when it has received a message and a local system will resend a message that hasn't been acknowledged. This makes it reliable. A is not correct because it is an unreliable means of transmission. B is not correct because UDP does no initial handshaking. C is not correct, TCP might or might not be slower depending on many factors. UDP may be quick because it has less initial setup. UDP will not be slower in all circumstance.	1.2
9	B	A default gateway is a critical component of networking, allowing a machine to forge a path through to other networks or hosts.	6.1
10	D	D is an undesirable feature because a firewall also has to allow network traffic to flow back into the network from the Internet. The other responses are good features of a firewall.	1.1

Question	Answer	Explanation / Rationale	Syllabus Sections
11	B	Security in the Physical layer is easily threatened by accidental or malicious intent. Biometric authentication, electromagnetic shielding and advanced locking mechanisms are typically used to secure it.	2.1
12	B	HTTPS use port 443 by default.	1.2
13	C	Data Link (Layer 2). At OSI model layer 2, data packets are encoded and decoded into bits. It furnishes transmission protocol knowledge and management, and handles errors in the Physical layer, flow control and frame synchronisation. The Data Link layer is divided into two sub layers: the Media Access Control (MAC) layer and the Logical Link Control (LLC) layer. The MAC layer controls how a computer on the network gains access to the data and permission to transmit it. The LLC layer controls frame synchronisation, flow control and error checking.	2.2
14	D	Contention is when nodes transmit at the same time, when contention occurs nodes need to 'back-off' and retransmit.	4.1
15	A	The Data Link layer provides node-to-node data transfer; a link between two directly connected nodes. It detects and possibly corrects errors that may occur in the Physical layer.	2.2
16	B	An MCU is a multipoint control unit that is used to bridge video conferencing connections and provides the capability for three or more terminals to participate in conference that can be controlled and moderated from a single location.	2.3
17	D	A gateway is a network device that converts voice and fax calls, in real time, between the public switched telephone network (PSTN) and an IP network. The primary functions of a VoIP gateway include voice and fax compression / decompression, call routing, and control signalling.	2.3
18	B	IEEE 802 is a group of IEEE standards dealing with local area networks and metropolitan area networks.	5.1
19	B	Wi-Fi Protected Access 2 (WPA2) is a security protocol and security certification program to secure wireless computer networks.	1.3
20	A	IDS is an event log monitoring system.	1.3