**SL Unit 3** **– Networks**  
Quiz 2

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| **Question 1** | | | |
| Objectives: | 3.1.1, 3.1.10 | Exam Reference: | Nov-14 9 |

1. (a) Outline the differences between a LAN and a VLAN. [3]

Award [1 mark] for identifying one difference between a LAN and a VLAN and [1 mark] for further development of that idea or identifying another difference up to [3 marks max].

A LAN is a physical, local area network defined by cables, and networking hardware whereas;

A VLAN is a virtual LAN defined by software parameters programmed into the networking hardware;

(b) Identify **two** factors that should be considered when selecting transmission media. [2]

*Award* ***[1 mark]*** *for each factor identified up to* ***[2 marks max]****.*

Cost;

Speed;

Security;

Reliability;

|  |  |  |  |
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| **Question 2** | | | |
| Objectives: | 3.1.15 | Exam Reference: | May-17 12.a |

A multinational business requires secure communication between its offices in different countries. The business’s salesforce also needs secure remote access, as they travel the world.

1. (i) Identify **two** different types of network that can be combined to use the internet

to address the above requirements. [2]

WAN/GAN (global area network)

VPN;

Do not accept LAN or MAN or VLAN

(ii) For **one** of the networks identified in part (a)(i), describe the security   
 characteristics that are particular to this network. [3]

*Award* ***[3 max]*** *for one of the networks:*

(WAN/GAN)

A secure authentication process;

That involves login, passwords and security questions *(response should include at least two of these)*;

One-time pads;

Encryption;

(VPN)

Authentication;

Tunnelling;

Which is a packet within a packet;

(Each layer) encrypted;

Location and IP of user masked;

Give follow through for wrong answer in (i) including answers of wireless/cabled

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| **Question 3** | | | |
| Objectives: | 3.1.1 | Exam Reference: | Nov-15 2 |

By making direct reference to the technologies used, explain how a virtual private network  
(VPN) allows a travelling salesperson to connect securely to their company’s network. [4]

*up to* ***[4 max]****.*

Tunnelling protocols;

Allows the data to be encapsulated/hidden whilst travelling across the internet;

Encryption protocols (IPSEC);

If hacked it will not be understandable;

The use of gateways;

Allows the salesperson to connect with the company’s server;

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| **Question 4** | | | |
| Objectives: | 3.1.1 | Exam Reference: | May-14 8 |

Identify **two** key features of a peer-to-peer (P2P) network. [2]

*Award up to* ***[2 marks max]***.

*Examples of features:*

No central server;

Resources are more widely available (storage, bandwidth, computing power);

Redundancy/recovery;

Supports file sharing for collaborative work;