VCE INFORMATION TECHNOLOGY

UNIT 1 OUTCOME 2



NETWORKS

REVISION NOTES

**Unit 1 Outcome 2**

**Networks**

Be able to recommend a networked information system for a specific use and explain possible security threats to this networked information system.

**Key Knowledge**

**1.** Ways in which people, procedures, equipment and data combine to form **networked information systems**

**2.** Capabilities of **Wide Area Networks (WANs)** and **Local Area Networks (LANs**)

**3.** **Advantages** and **disadvantages** for individuals and organisations of using networks in a global environment

**4.** Functions and characteristics of key **hardware** and **software** components of networks required for communicating and storing data and information

**5.** Characteristics of wired and wireless network **protocols**

**6.** Strengths and limitations of **wireless** and **wired** communications technology, measured in terms of data transfer rate, cost and reliability

**7.** Types, capabilities and limitations of **mobile devices** connected to networks

**8.** Roles and responsibilities of **professional people** who develop and support networks, including procedures to control the operation of networks

**9.** **Security threats** to data and information communicated and stored within networks

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| **1.** Ways in which people, procedures, equipment and data combine to form **networked information systems** |

**1. List** the four components of a ‘Networked Information System’

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**2. Explain** what the component ‘Equipment’ involves?

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**3. Complete** the following table for a ‘Supermarket Networked Information System’

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| **Component** | **Example** |
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| **2.** Capabilities of **Wide Area Networks (WANs)** & **Local Area Networks (LANs)** |

**1. Explain** how a LAN is different to a WAN

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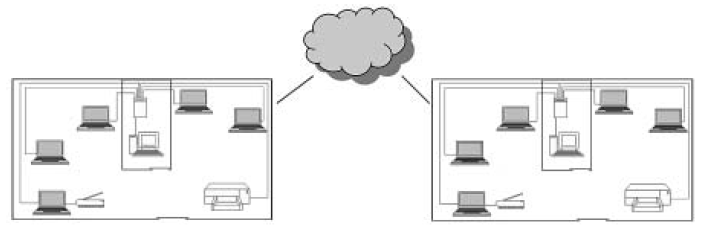
**2. Discuss** why a WAN often is required to use “3rd party” transmission media

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**3. Identify** if the diagram below shows a LAN or WAN. **Justify** your answer



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**4. Discuss** how a Client/Server LAN differs from a Peer to Peer LAN

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| **3.** **Advantages** and **disadvantages** for individuals and organisations of using networks in a global environment |

**1. List** five advantages of networks

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**2. List** two disadvantages of networks

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**3.** From the table below **indicate** which advantage or disadvantage is involved

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| **Scenario** | **Advantage / Disadvantage** |
| Anita bought a pair of shoes from EBay |  |
| Jessica is able to email her boss |  |
| Shop Ahoy cannot afford $120 000 to upgrade their servers |  |
| All students can access files from a shared folder |  |
| James could not do any work as the network was down |  |
| The school was able to buy a site licence for Adobe CS 5.5 |  |
| Peter was able to print to the colour printer in the library |  |

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| **4.** Functions and characteristics of key **hardware** and **software** components of networks required for communicating and storing data and information |

**1. Explain** the role of the following network devices:  
  
Modem

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Network Interface Card

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Switch

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Router

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Wireless access Point

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**2. Explain** the purpose of a Network Operating System. **Identify** four tasks performed by a NOS

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| **5.** Characteristics of wired and wireless network **protocols** |

**1. Discuss** why networks require protocols

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**2. Explain** how data travels on an Ethernet network

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**3. Discuss** how ‘packet switching’ works and **explain** its advantages

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**4.** If data is being sending data wirelessly **identify** what protocol would be used

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**5. Discuss** the relationship between a router and protocols

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| **6.** Strengths and limitations of **wireless** and **wired** communications technology, measured in terms of data transfer rate, cost and reliability |

**1. Complete** the following table:

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| **Media** | **Definition** | **Wired / Wireless** | **Data Transfer**  **Rate** | **Distance** | **Cost** | **Reliability** |
| Unshielded Twisted Pair |  |  |  |  |  |  |
| Coaxial |  |  |  |  |  |  |
| Fibre Optic |  |  |  |  |  |  |
| Broadcast Radio |  |  |  |  |  |  |
| Cellular Radio |  |  |  |  |  |  |
| Microwave |  |  |  |  |  |  |
| Satellite |  |  |  |  |  |  |
| Infra-Red |  |  |  |  |  |  |

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| **7.** Types, capabilities and limitations of **mobile devices** connected to networks |

**1. Complete** the following table:

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| **Device** | **Definition** | **Limitations** |
| Smart Phone |  |  |
| Personal Digital Assistant |  |  |
| Netbook |  |  |
| Portable Media Player |  |  |
| Navigation System |  |  |
| Digital Camera |  |  |

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| **8.** Roles and responsibilities of **professional people** who develop and support networks, including procedures to control the operation of networks |

**1. Describe** the role of a Network Manager

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**2. Explain** how the role of a Network Technician is different to the Network Manager

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**3. Define** the term ‘Help Desk’ and **explain** the role of a ‘Help Desk Assistant’

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| **9.** **Security threats** to data and information communicated and stored within networks |

**1. Explain** the difference between an ‘Accidental Threat’ and a ‘Deliberate Threat’

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**2. Define** the term ‘Malware’

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**3. Explain** why it is important to install both a ‘Firewall’ and ‘Malware Protection’

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**4. Identify** the security measure that can stop the following threats

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| **Threat** | **Security Measure** |
| Non-students of the university entering the computer lab and using the network |  |
| A hacker trying to enter a network |  |
| A hacker trying to intercept data as it is transmitted across the internet |  |
| Users continue to delete files that they require |  |
| A program downloaded to view movies, but instead is spying on the user |  |