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| **Qualification Details** | | | |
| **Training Package Code & Title** | **UEE11 – Electrotechnology Training Package (Release 2.0)** | | |
| **Qualification National Code & Title** | **UEE40720 – Certificate IV in Electronics and**  **Communications** | **State code:** | **BFP4** |
| **UEE40120 – Certificate IV in**  **Computer Systems** | **BFL8** |
| **UEE50520 – Diploma of Electronics and**  **Communications Engineering** | **BFP5** |
| **UEE50120 – Diploma of**  **Computer Systems Engineering** | **BFQ6** |

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| **Assessment Title** *(as per DAP)* | Written Assessment | **Location** | 10F80 |
| **Date Due** | Week 8 | **Date Received** |  |

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| **Student Name** |  |
| **Student Declaration** | I declare that the evidence submitted is my own work: |

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| **Assessor Name** | **Jamal Abu Shnaf** | | | |
| **Assessment Decision** | Satisfactory | | Not Yet Satisfactory | |
| **Is student eligible for reassessment (Re-sit)?** | No | Yes | **Reassessment Date:** |  |
| **Assessor Signature** |  | | **Date** |  |

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| --- | --- | --- | --- |
| **Feedback to student** | | | |
| See BB | | | |
| **Feedback from student** | | | |
|  | | | |
| **Student signature** |  | **Date** |  |

**Student Instructions**

* Adjustments to assessments may be made for you, providing the adjustments comply with the principles of assessment and rules of evidence.
* You must answer all questions satisfactorily. Answer in the space provided. Use a different font so your answer stands out from the question. Submission must be through Black Board (BB).
* You must ensure that you have answered all parts of a question. You must include at least a paragraph for a 'briefly explain' question. One sentence will be deemed unsatisfactory.
* Feedback will be given through Black Board (BB). In case of not passing this assessment, you can re-sit for another assessment in Week 10 or 20 (the assessor will confirm with you the date).
* You may be asked verbal questions in class to prove authenticity and further proof of understanding of the submitted assessment.

Assume you are working as a Network Technician. You are required to investigate benefits of wireless, standard and properties before you can implement/design wireless networks.

Answer all questions.

1. Explain briefly the term “wireless LAN” What are the benefits of a wireless network? What are the major factors to be considered before implementing a wireless LAN? How is information carried in wireless?

Wireless LAN is a Local Area Network that doesn’t use wires to connect systems within the network together.

Benefits are listed in question 3.

What needs to be considered is:

Whether there is going to be interference e.g. copper plating or wires in the path of the devices to each other.

How many devices are going to be in the network.

Information is carried out via radio waves.

1. What are the main purpose of IEEE 802.11 committee and Wi-Fi Alliance?

IEEE 802.11 committee oversees the development of industry protocols for wireless networks they also include Ethernet networks.

Wi-Fi Alliance creates certification programs for wireless LAN products & gives Wi-Fi certification to products that have passed the certification tests.

1. List five benefits of wireless networking.
   1. Minimal tripping hazards from wires
   2. Mobility & Flexibility because you don’t have to stay in one spot to access the network.
   3. Lower cost than a wired network
   4. Easier installation
   5. Expandability.
2. List the main function of the seven layers of the OSI model.

Each layer is responsible for specific data-sending & receiving tasks.

* 1. Physical Layer, this layer works with Media, Signal & Binary transmission.
  2. Data Link Layer, this layer works with Physical Addressing (MAC & LLC addressing).
  3. Network Layer, this layer works with IP addresses & determination of paths.
  4. Transport Layer, this layer works with End-to-End connections & reliability.
  5. Session Layer, this layer works with Interhost communication.
  6. Presentation Layer, this layer works with Encryption & representation of data.
  7. Application Layer, this layer works with the Network process to application.

1. What is a wireless NIC? Research and give two examples of wireless NICs.

Wireless NIC is a Wireless Network Interface Controller. Examples:

* Wireless Network Card
* Bluetooth adapter

1. Briefly explain the functions of an Access Points and a wireless bridge. Conduct a research and Name two available APs and wireless bridges.

An Access Point acts as a standalone root unit. An Access Point functions as a hub that links all stations together.

A Wireless Bridge converts any wired network device with an ethernet port to the latest wireless technology.

Access Points:

* TP-Link EAP110 Wireless-N Access Point PoE
* AX3600 Dual Band PoE Multi-Gig WiFi 6 Access Point

Wireless Bridges:

* Long Range Wi-Fi 5 Wireless Bridge (20km) DAP-3712
* Ubiquiti PowerBeam 2AC Point-to-Point Wireless Bridge

1. Briefly explain what is a network operating system

A Network Operating System is what communicates with the LAN hardware & allows users to communicate with each other & share files & peripherals.

1. What are four types of internetwork services that Cisco IOS provides?

Reliable adaptive routing services.

WAN optimization services.

Management & security services.

Scalability services.

1. What are the main function of the following components of a network:

* Wireless NIC card.
* LAN switch.
* Wireless Routers.
* Access Point.
* Wireless bridge.
* Wireless controllers.
* LAN media
* WAN media

1. What is the industry standard for network protocol? What are the layers of the TCP/IP model.
2. List the set of protocols used for the following network services:

a. WWW

b. E-mail

c. IP-Telephony

1. List the Operating system for the AP and the wireless bridge in your class.
2. List the boot process of the 1252 AP in your class.
3. What installation instructions are available for 1252 AP (or similar AP)? List them briefly.

**End of Assessment**