Digital Technologies

Learner Name	
Course	Pearson BTEC Higher National Certificate in Computing
Awarding Body	BTEC (Pearson)
Module Name(s)	Unit 2 – Networking (2019 rev)
Assignment Title & Number	Assignment 1 of 2
Assessor's Name	John Terry
Hand out Date	30th January 2020
Hand in Date	20th March 2020
Feedback Date	+3 weeks

Assessment Brief IQA by: *(Name & Signature)*		**Assessment Brief sample by Lead IQA: *(Name & Signature)***	
Date:	?/?/2020	**Date**	

Specific outcomes and criteria being assessed

Module	Grading Criteria	Description
2	P1 (LO1)	Discuss the benefits and constraints of different network types and standards.
2	P2 (LO1)	Explain the impact of network topology, communication and bandwidth requirements.
2	M1 (LO1)	Compare common networking principles and how protocols enable the effectiveness of networked systems.
2	D1 (LO1)	Critically evaluate the topology protocol selected for a given scenario to demonstrate the efficient utilisation of a networking system.
2	P3 (LO2)	Discuss the operating principles of networking devices and server types.
2	P4 (LO2)	Discuss the interdependence of workstation hardware with relevant networking software.
2	M2 (LO2)	Explore a range of server types and justify the selection of a server, considering a given scenario regarding cost and performance optimisation.

English, maths and other Skills for Success covered in this assignment	**English** **Written reports and presentations.**	**Maths** **-**	**Skills for Success** **Describing and explaining concepts**
Learner submission sampled by IQA: (Name and signature)		**Learner submission sampled by Lead IQA: (Name and signature)**	
Date		**Date**	

COPYING DISCLAIMER

I confirm that all the work contained in this assignment, being presented for assessment, is my own work.

I also confirm that I have not copied this work from other people's papers, electronically from their disk, from textbooks, CD ROM or from the Internet.

I also understand that if I hand in an assignment that has work in it that has been copied, this will be subject to disciplinary action and may cause me to lose my place on the course.

Student Signature:		**Date:**	

Assessor declaration	I certify that the evidence submitted for this assignment is the learner's own. The learner has clearly referenced any sources used in the work. I understand that false declaration is a form of malpractice.		
Assessor signature	John Terry	**Date**	
		Date of feedback to learner	
Resubmission authorisation by Lead Internal Quality Assurer*		**Date**	

* All resubmissions must be authorised by the Lead Internal Verifier. Only one resubmission is possible per assignment, providing:

- The learner has met initial deadlines set in the assignment, or has met an agreed deadline extension.
- The tutor considers that the learner will be able to provide improved evidence without further guidance.
- Evidence submitted for assessment has been authenticated and accompanied by a signed and dated declaration of authenticity by the learner.

**Any resubmission evidence must be submitted within 10 working days of receipt of results of assessment.

Vocational Scenario

You are managing the network setup and configuration for a small chain of estate agents in the Milton Keynes area called MK Agents. They have one main branch and currently have 3 smaller branches, one near the edge of Milton Keynes and two in surrounding villages.

Task 1	**Grading Criteria Covered:** Unit 2: P1 (L01) Discuss the benefits and constraints of different network types and standards.
Evidence Required	A 1.5-2 page report submitted as a Word or PDF document.
MK Agents currently use a client-server approach within their offices, however they do have cloud services from Microsoft (Office 365) in order to create documents and collaborate within the organisation. They have a main domain controller and web server which have been virtualised in the head office to run from one machine. They use hardware from a range of manufacturers including both computing hardware, mobile devices and networking equipment. The local servers offer shared folders used by staff and the internet is available to staff via the networking equipment at each site. Discuss the benefits and constraints from the different network types and standards that MK Agents will be using in the network described above.	

Task 2	**Grading Criteria Covered:** Unit 2: P2 (LO1) Explain the impact of network topology, communication and bandwidth requirements.
Evidence Required	Illustrated Report
MK Agents make use of a star topology in their various sites, with a centralised router providing internet access and VPN server offering a way for the remote networks to connect to the main site. Each site also has a router that automatically connects to the main site via VPN upon activation. The remote sites have backup methods of connecting to the internet, and the main office using wireless technology and the main office has a fibre-optic connection to the internet with a SLA giving a fix within 2 hours of raising a fault. Explain the impact of the choice of network topology, communication methods chosen and your estimation of their bandwidth requirements	

Scenario

Your organisation has designed one network for MK Agents where each site is connected to at least two other sites (more in the case of the head office) in order to maintain a redundancy of connection.

Task 3	**Grading Criteria Covered:** Unit 2: M1 (LO1) Compare common networking principles and how protocols enable the effectiveness of networked systems. Unit 2: D1 (LO1) Critically evaluate the topology protocol selected for a given scenario to demonstrate the efficient utilisation of a networking system.
Evidence Required	2-3 page report
Produce a report that: • Compares a range of common networking principles & describes alternative topologies. • Compares a range of protocols that enable the effectiveness of networked systems (including systems based on internet technology). • Identifies and critically evaluates the topology protocol that was selected for the network in the scenario. Make sure you include in your answer how the protocol allows for efficient utilisation of the system.	

Task 4	**Grading Criteria Covered:** Unit 2: P4 (LO2) Discuss the interdependence of workstation hardware with relevant networking software.
Evidence Required	1.5-2 page report
Your manager has asked you to address the issue of instances where computer workstation hardware relies on specific software in order to work and understand how it could fail. Write a report that discusses this interdependence between hardware and software including why it is important and what can go wrong.	

Task 5	**Grading Criteria Covered:** Unit 2: P3 (LO2) Discuss the operating principles of networking devices and server types. Unit 2: M2 (LO2) Explore a range of server types and justify the selection of a server, considering a given scenario regarding cost and performance optimisation.
Evidence Required	Proposal Document (Word/PDF)
You must produce a proposal document for new equipment that includes the operating principles of network devices you are suggesting for the network and the different types of server that could be used. Discuss both hardware and software in your answer. In addition, you must select appropriate server(s) for the network from a supplier of your choice, justifying the choice (including cost and performance).	

Feedback

Module Number	Criteria included in this assessment	Met or Not Met	Comments

Task 1				
2	P1 (L01)	Discuss the benefits and constraints of different network types and standards.		
Task 2				
2	P2 (LO1)	Explain the impact of network topology, communication and bandwidth requirements.		
Task 3				
2	M1 (LO1)	Compare common networking principles and how protocols enable the effectiveness of networked systems.		
2	D1 (LO1)	Critically evaluate the topology protocol selected for a given scenario to demonstrate the efficient utilisation of a networking system.		
Task 4				
2	P4 (LO2)	Discuss the interdependence of workstation hardware with relevant networking software.		
Task 5				
2	P3 (LO2)	Discuss the operating principles of networking devices and server types.		
2	M2 (LO2)	Explore a range of server types and justify the selection of a server, considering a given scenario regarding cost and performance optimisation.		

Assessor's Feedback	
What Went Well? **Even Better If...** **SPaG & Maths Feedback**	
Assessor Signature:	**Date:**
Student Signature:	**Date:**

Student's Target (Student to complete from feedback)	
Using the feedback provided, consider how you will improve the quality of your assessed work and identify targets to achieve this.	
Signature:	**Date:**