Level 3 Network management and security (7540-363)

Systems and Principles
Assignment guide for Candidates
Assignment A

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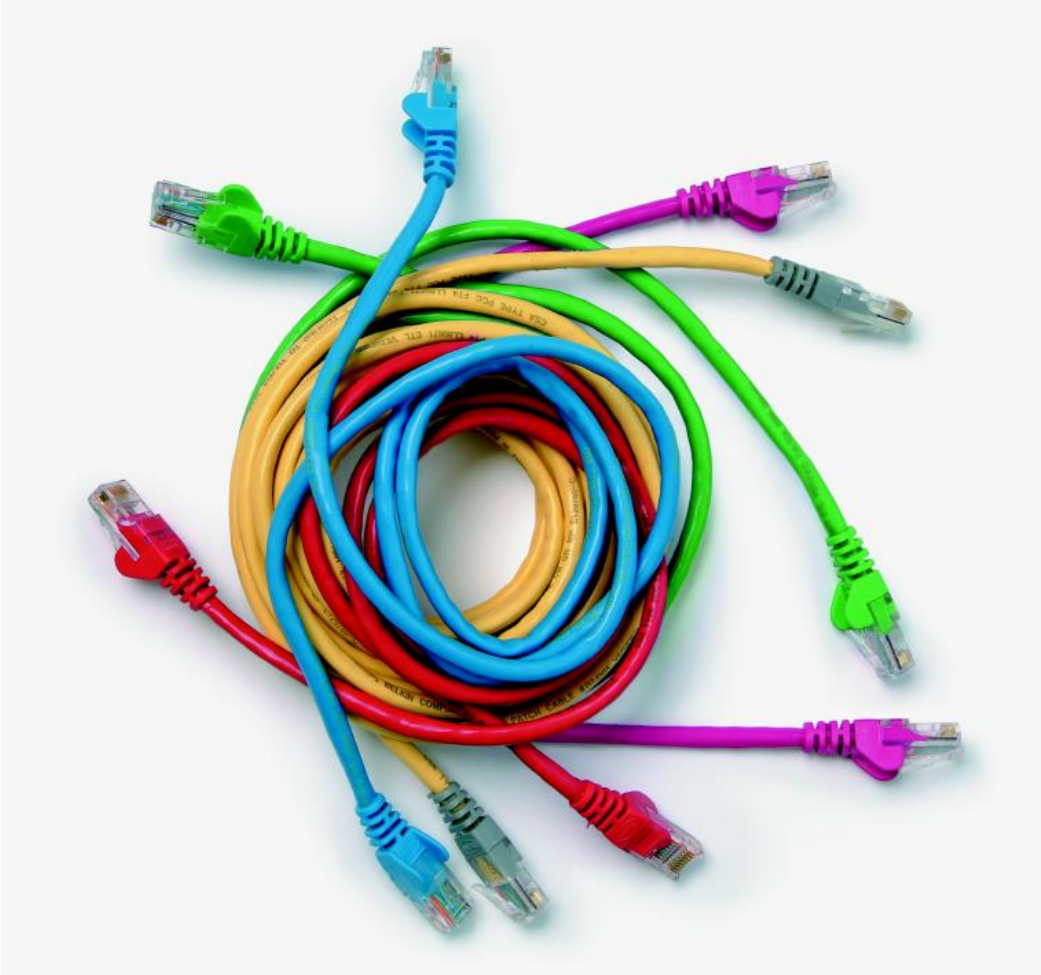

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Level 3 Network management and security (7540-363)
Assignment A

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 3 Network management and security (7540-363).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **3 hours**.

Level 3 Network management and security (7540-363)

Candidate Instructions

Time allowance: 3 hours

Assignment set up:

This assignment is made up of **three** tasks:

- Task A – Create "Dictionary of Terminology" material for inclusion in a Network Technician's guide.
- Task B – Create a basic Network Diagram explaining Broadcast Domains.
- Task C – Identify the effect unauthorised applications may have on a network.

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Scenario

You are a final year Apprentice at ZDB Networks; a company specialising in Network Design and Installation.

You have been asked by your line manager to provide information for several sections of their Networking Guide which is being compiled for future Apprentices and Junior Technicians, based on the OSI model.

You have also been asked to create a Network Diagram that will visually explain several key concepts involved in Network Design. This diagram should also have explanation notes included where appropriate. The network diagram may be hand drawn or created using appropriate software

Any definitions you provide should use non-technical language wherever possible, including describing technical terms, components or devices.

Where you use technical terminology in a definition, you should also provide an explanation of the terminology.

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Task A – Create "Dictionary of Terminology" material for inclusion in a Network Technician's guide.

Please use the Answer sheet provided to complete Tasks A – C

1 Identify and briefly explain the purpose of **each** layer in the OSI 7 layer model.

2 Explain how each of the following devices are used in a network, identifying the OSI layer(s) that **each** device operates at:

- Router
- Switch
- Bridge
- Hub.

3 Identify which of the following devices can be remotely managed:

- Router
- Switch
- Bridge
- Hub.

4 Identify and explain **three** basic principles of networking that directly affect "Network Performance".

5 Define and explain the use of the following Routing Protocols:

- RIP
- OSPF
- EIGRP

6 Explain how **each** protocol may contribute towards managing network traffic and how they may affect network performance.

- RIP
- OSPF
- EIGRP

7 Explain the meaning of the term "Congestion" as applied to networking.

8 Identify the effects congestion may have on **each** of the following types of network traffic:

- Client/Server
- Streaming Media (i-player)
- Voice over IP (VoIP)

9 Define and explain the following abbreviations

- MTBF
- MTTR

10 Briefly explain the following terms

- Up-Time
- Down-Time
- Useful Life Cycle
- Redundancy
- Failover.

11 Define and briefly explain the following Network Management terms, giving examples of their use in practice:

- QoS,
- OSS,
- MIB,
- NMS (as a system),
- NMS (as a Software Application).

12 Identify and explain the **three** key components of a Network Management Protocol.

Task B – Create a basic Network Diagram explaining Broadcast Domains.

1 Create a basic diagram of an IP Network in order to explain the concept of "Broadcast Domains"
Briefly explain how network traffic would be managed in your network.

Task C – Identify the effect unauthorised applications may have on a network.

1 Explain what is generally meant by "Unauthorised Applications" in terms of a business network.
Identify **two** common unauthorised applications and explain the effect they may have on a business network.

2 Describe **two** functions of a Network Protocol Analyser tool (sniffer).

3 Identify and describe **three** situations where it would be desirable to deploy "Redundant Systems"

When you have finished working:

- Sign each document above your name and label all removable storage media with your name.
- Hand all paperwork and removable storage media to your assessor.

If the assignment is taken over more than one period, all paperwork and removable media must be returned to the test supervisor at the end of each sitting.

End of assignment

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