Level 3 Voice and data communications (7540-370)

Systems and Principles
Assignment guide for Candidates
Assignment A

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Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 3 Voice and data communications (7540-370).

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 Voice and data communications (7540-370)

Candidate Instructions

Time allowance: 3 hours

Assignment set up:

This assignment is made up of **two** tasks:
- Task A – Produce a table of your observations and results obtained when attempting to communicate between two computers.
- Task B – Answer multiple choice questions.

Scenario

You are required to set up a minimal computer network with **two** computers, using Transmission Control Protocol (TCP)/Internet Protocol (IP) for **four** different settings. Ensure that you understand all instructions and follow them precisely.

Task A – Produce a table of your observations and results obtained when attempting to communicate between two computers.

1 Nominate the computers as 'computer 1' and 'computer 2' and switch both computers on.

2 Note and record the operating system used on both computers.

3 Establish and record the network identity or the computer name of both computers.

4 Using a hub or a crossover cable, connect both computers together.

5 Note and record the existing IP address and the subnet mask setting for both computers.

Setting 1

6 Change the IP-address on computer 1 to 192.168.0.1.
Change the IP-address on computer 2 to 192.168.0.2.
Set the subnet mask of 255.255.255.0 on both computers; reboot both computers.

7 Using the ping command:
ping computer 2 from computer 1 and record the response
ping computer 1 from computer 2 and record the response.

Setting 2

8 Change the IP-address on computer 2, so that both computers are set to 192.168.0.1.
Check that the subnet mask of 255.255.255.0 is set on both computers. Reboot both computers.

9   Connect both computers. Observe and record the response and the reason for the response.
    Setting 3

10 Change the IP-address on computer 1 to 192.168.4.5 using a class B subnet mask
    255.255.0.0. Change the IP-address on computer 2 to 192.168.4.168 and set the subnet
    mask to 255.255.255.0. Reboot both computers.

11 Connect both computers. Try to access one of the computers via the network connection.
    Record the result and state the reason.

12 Change the subnet mask of computer 1, with the IP address of 192.168.4.5, from
    255.255.0.0 to 255.255.255.0. Both computers should now have a subnet mask of
    255.255.255.0. Reboot both computers.

13 Connect both computers and try to access one computer via the network. Record the result
    and state the reason.

    Setting 4

14 Change the IP-address on computer 1 to 192.168.4.251
    Change the IP-address on computer 2 to 192.168.4.2
    Change the subnet mask for both computers to 255.255.255.192.
    Reboot both computers.

15 Connect both computers and state whether they can connect via the network.

16 Set the subnet mask on both computers to 255.255.255.0, reboot both computers if
    necessary and record the response.

17 Re-apply the IP-address 192.168.4.2 and the subnet mask 255.255.255.192 of computer 2.
    Record and apply a valid IP-address for computer 1 to successfully connect to computer 2.

18 Reset both computers to their original settings, recorded at (5.).

19 Please use the Answer Sheet provided to complete Task A19.
    Compile your results for settings 1 to 4 and present them in a table.

Task B – Answer multiple choice questions

Please use the Answer Sheet provided to complete Task B.

1   Please use the Answer Sheet provided to complete Task B.
    The components of a simple voice communication system are
    a
    source
    transmitter
    modulator
    receiver
    destination.
    b
    source
    demultiplexer
    transmission system
    receiver
    destination.
    c
    source
    transmitter
    transmission system
    receiver
    destination.
    d
    source
    repeater
    modulator
    receiver
    destination.

2   The data communications technology that uses two different frequency bands, referred to as
    the upstream and the downstream is
    a ISDN
    b ADSL
    c VOIP
    d PSTN.

3   The type of switches in which a dedicated channel (or circuit) is established for the duration of
    a transmission is
    a packet
    b circuit
    c message
    d channel.

4   The type of coding that changes the format of the data to suit the media transmission
    characteristics is
    a channel
    b source
    c cable
    d line.

5   The LAN device that creates collision domains is a
    a router
    b hub
    c switch
    d Network Interface Card (NIC).

6   The network access control where a computer will test the network for activity, detect a collision, and then wait for a random time before attempting access again is
a CSMA/CD
b CSMA/CA
c MAC
d CRC.

7   The field in the IEEE 802.3 frame format that checks for errors is the
a SFD
b FCS
c SA
d DA.

8   The layers of the TCP/IP model from top to bottom are
a
Internet
transport
application
network access.
b
Internet
network access
transport
application.
c
application
transport
Internet
network access.
d
application
Internet
network access
transport.

9   The system that can automatically assign IP addresses is
a DNS
b UDP
c TFTP
d DHCP.

10 The **four** main components used in a PBX are
a
trunk interface
station interface
DTE
modem.
b
trunk interface
station interface
switching fabric
call centre database
c
DTE
trunk interface
station interface
modem.
d
DTE
call centre database
switching fabric
station interface.

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