

## Unit Test 1.5

#thatsnetworksforyou

**1) Identify the main function of the FTP protocol [1]**

Used to access, edit and move files between devices

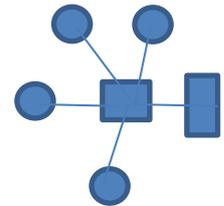
**2) Identify the main function of the SMTP protocol [1]**

Used to send emails. Also to transfer emails

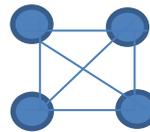
**3) Name the protocol that is responsible for setting rules for how devices will connect via a network, specifically by using packet switching [1]**

TCP

**4) Using a labelled diagram draw a star topology (include a server in your diagram) [3]**



**5) Using a labelled diagram draw a full mesh topology [3]**



**6) Describe one advantage of using a Mesh topology over a star topology [2]**

No dependency/reliance on other devices – if one fails the rest will keep working

**7) Describe the purpose of a MAC address [2]**

To uniquely identify a device on a network that cannot be changed (issued by manufacturer). Stored as 48 or 64 bit binary number (often referred to in hexadecimal)

**8) Describe the term “layer” in the context of computer networks [3]**

A group of protocols that perform a similar action[1] They are self-contained[1] Each layer serves the layer above it.[1]

**9) Identify the main role of the following layers :**

**a) Transport layer[1]**

Controls the flow of data – splitting it into packets and checking those packets are correctly sent eg TCP

**b) Network layer [1]**

Making connections between networks – directing packets (used by routers) eg IP

**10) A file is being sent from one computer to another on a large network. Explain how packet switching is used to transmit this file in an effective way. You may use a diagram to support your answer [7]**

Breaking the files in to equal size chunks[1] Add a header to the file that contains important information like segment number[1] and sender and recipient IP address [1]. Also adds a checksum value to the packet [1].

Packets are then sent across the network taking different paths depending on network performance[1]

switches and routers will use the optimum path at that given time[1]. Packets could arrive at the destination

device in a mixed up order [1]. They are reassembled using the header segment number [1] and a checksum in

performed to ensure the data is intact [1]. If any segments(packets) are missing or corrupt they are requested to be resent[1]

**11) Identify ONE advantage of using 2.4Ghz Wi-fi and ONE advantage of using 5GHz wifi [2]**

2.4GHz – Better at getting through obstacles like walls

5GHz – faster transmission rate of data (higher bandwidth)

**12) Describe ONE advantage of using a wired Ethernet connection over a wireless one [2]**

Bandwidth – wired connections have a larger bandwidth over wireless methods leading to faster download speeds.