

NETWORKS

PRACTICE TEST #1

APPLIED INFORMATION TECHNOLOGY UNIT 4



ATAR Survival Guide

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Networks Practice Test 1

Time Allocated: 45 minutes

Marks Allocated: /52

Questions to Answer: 6

Question 1: Define the following communication protocols:

a) TCP/IP (2 marks)

b) HTTP (2 marks)

c) HTTPS (2 marks)

d) WAP (2 marks)

Question 2: Explain what IEEE 802.11x is? (2 marks)

Question 5: Jason has employed you, a network architect, to design a small business LAN network which must include the following: (10 marks)

- Internet
- 3 desktop PCs
- 2 wireless tablet computers
- 1 mobile phone
- Modem router
- Ethernet Switch
- Firewall
- Types of transmission media between devices
- Include appropriate icons for modem router, firewall and switch
- Printer

Question 6: Jason operates a manufacturing business that builds small home appliances such as microwaves. These products can sometimes produce a large level of electromagnetic interference when operated. Discuss what transmission media Jason should use to protect the data flow in his network. (3 marks)

End of Assessment

Answer Key

Question 1: Define the following communication protocols:

a) TCP/IP

- Transmission Control Protocol/ Internet Protocol (1 mark)
- A communication protocol used to define how data packets are transferred between other networks including the internet (1 mark)

b) HTTP

- Hypertext Transfer Protocol (1 mark)
- HTTP is a communication protocol that defines how computers communicate with internet web servers. HTTP defines the communication protocol for data sent to web servers and also defines how computers should respond to messages sent from web servers (1 mark)

c) HTTPS

- Hypertext Transfer Protocol Secure (1 mark)
- HTTPS uses the same communication protocol as HTTP, but the data packets are secured through secure socket layer (SSL). (0.5 mark)
- Secure socket layer is the process of encrypting data through public key infrastructure (PKI) (0.5 marks)

d) WAP

- Wireless Application Protocol (1 mark)
- WAP defines how data is transmitted wirelessly and securely amongst wireless handheld devices such as Handheld radios or pagers (1 mark)

Question 2: Explain what 802.11x is?

- 802.11x is a wireless standard that defines how devices use radio waves to communicate with other Wi-Fi enabled devices (2 marks)
- IEEE stands for Institute of Electrical and Electronics Engineers standard for wireless communication standard (No marks)

Question 3: Explain what 802.3 is? (4 marks)

- 802.3 is the communication standard for Ethernet (1 mark)
- 802.3 communication standard states that no computer, node or any other device can control how data is transmitted between 2 devices (2 marks)
- Devices send data as soon as connections with other devices are made and if a data collision occurs, data is resent until it is successfully received by another device (1 mark)

Question 4: John runs an accounting business called 'Numbers and Co'. He holds sensitive data about his clients including financial statements about their companies and recent transactions. What are two measures that can be used to protect his network? Briefly explain what the measure does and how it is used to protect a network? (6 marks)

Choose from any of the following

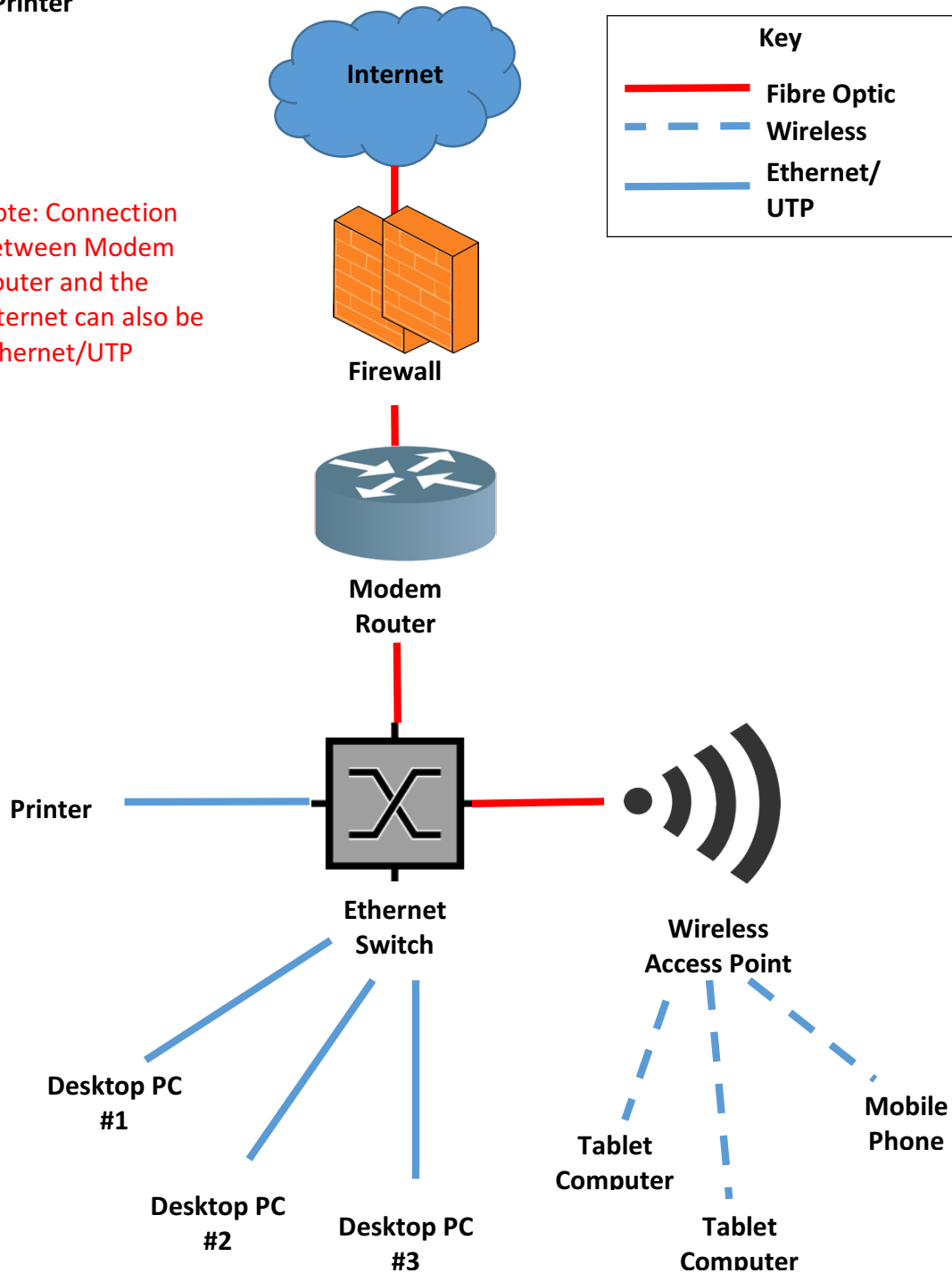
- Firewall (1 mark)

- Firewall is a software or hardware that monitors incoming and outgoing data packets. (1 mark)
- Any unauthorised data packets entering the network is denied access into the network (1 mark) can also block DDoS attacks
- Passwords (1 mark)
- Passwords are a combination of characters, digits and/or symbols used in combination with a username (eg email), required to access certain computer resources (1 mark)
- Passwords protect a network by blocking unauthorised users from accessing password protected data stored on the network or access to devices connected to the network (1 mark)
- Physical security (1 mark)
- Physical security refers to blocking physical access to servers and monitoring access to databases. (1 mark)
- Physical security can be in the form of locks on servers, video surveillance of server rooms, biometric security to access server rooms and audit trails to record employee entry and exit of server rooms (1 mark for at least 3 examples)
- Include any other reasonable answers
- 1 mark for stating security measure
- 1 mark for the definition of the security measure
- 1 mark for explaining how the security measure secures a network

Question 5: Jason has employed you, a network architect, to design a small business LAN network which must include the following: (10 marks)

- Internet
- 3 desktop PCs
- 2 wireless tablet computers
- 1 mobile phone
- Modem router
- Ethernet Switch
- Printer
- Firewall
- Types of transmission media between devices
- Include appropriate icons for modem router, firewall and switch

Note: Connection between Modem Router and the internet can also be Ethernet/UTP



Question 6: Jason operates a manufacturing business that builds small home appliances such as microwaves. These products can sometimes produce a large level of electromagnetic interference when operated. Discuss what transmission media Jason should use to protect the data flow in his network. (3 marks)

- Optic Fibre (1 mark)
- Optic fibre is a transmission medium that uses hundreds of strands of fibreglass and uses light to transfer data. (1 mark)
- Optic fibre contains insulation and the use of light does not interfere with electromagnetic interference unlike copper wires. (1 mark)

OR

- Shielded Twisted Pair Ethernet (STP) (1 mark)
- STP is alike a regular twisted pair cable that uses copper wires to transfer data. It contains, however, an insulating material (1 mark)
- The insulating material protects the wire and data flow from electromagnetic interference.

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