**Module 5 (30 points) – Chapter 6**

1. (Whitman & Mattord, 2016, p. 351) How is an application layer firewall different from a packet-filtering firewall? Why is an application layer firewall sometimes called a proxy server? Name several limitations of a proxy server.

The packet-filtering firewall is installed onto the network while the application firewall will be installed on a separate computer to the filtering router. The application layer is sometimes called as proxy server because it can be configured and act as a proxy for service requests. Some limitations of a proxy server are that they can not easily be reconfigured to protect itself against incoming attacks and it can only handle one or a few specific protocols.

1. (Whitman & Mattord, 2016, p. 351) What is stateful inspection? How is state information maintained during a network connection or transaction?

Stateful inspection is used to monitor active connections, the information gathered helps determine which network packets are allowed through the firewall.

1. (Whitman & Mattord, 2016, p. 351) Describe how the various types of firewalls interact with the network traffic at various levels of the OSI model. Why does network security require a network

architecture?

Each firewall is set up to help determine what is safe at the different levels of the model. The MAC firewall starts with the physical and data link layers. The third layer, network, is taken care of by packet-filtering and the SPI firewall which also takes care of the fourth layer, transport. Application layer proxy firewall takes care of the last three layers being session, presentation, and application. The network security requires a network architecture as the threats each layer deals with is different. The layers connect to different parts of the system and a single firewall can not protect against so many different types of attacks.

1. (Whitman & Mattord, 2016, p. 351) What is a VPN? Why is it becoming more widely used? Identify a provider of VPN services.

VPN stands for virtual private network. It is becoming more used as entertainment becomes accessible in certain states as well as the need for anonymity when online. One provider of a VPN is NordVPN.

1. (Whitman & Mattord, 2016, p. 352) Using Figure 6-18 on page 330 of your textbook, suppose management wants to create a server farm that is configured to allow a proxy firewall in the DMZ to access an internal Web server (rather that a Web server in the DMZ). Do you foresee any technical difficulties in deploying this architecture? What advantages and disadvantages are there to this implementation? Why are some security professional avoiding proxy servers?

I see this as being difficult as the DMZ is not to be used, they would need a sort of proxy server to cover the seventh rule. Some disadvantages would be that the filtering is done internally which lets attacks get closer than they could. The advantage would be that the system helps prevent internal attacks that could lead to accessing the internal network. Some professionals avoid proxy servers because the proxy needs to be set up but can only do one or a few different functions.

**Bibliography**

Whitman, M. E., & Mattord, H. J. (2016). *Principles of Information Security*. Course Technology.