1.3 EXCHANGING DATA · 1.3.3

Network security & threats

Original practice questions · 33 marks · about 45 minutes · spec 1.3.3(c)

Instructions. Answer all questions. The number of marks is shown in brackets [ ]. Quality of written communication is assessed in the extended-response question.

1

Total: 6 marks

This question is about malware.

(a) State what is meant by *malware*. **[1]**

(b) Explain the difference between a virus and a worm. **[2]**

(c) Describe what ransomware does. **[2]**

(d) State one way anti-malware software helps protect a computer. **[1]**

2

Total: 5 marks

> An employee receives an email that appears to be from their bank, asking them to confirm their password via a link.

(a) Name the type of attack being described. **[1]**

(b) Explain why this type of attack can succeed even on a well-secured network. **[2]**

(c) Describe one measure the company could take to reduce the risk of this attack. **[2]**

3 **Total: 6 marks**

A website lets users log in by typing a username and password.

(a) Describe how an SQL injection attack could be carried out on this website. **[3]**

(b) Explain how the website could be protected against SQL injection. **[3]**

4 **Total: 4 marks**

(a) Describe what happens during a denial of service (DoS) attack. **[2]**

(b) Explain how a firewall helps protect a network. **[2]**

5 **Total: 12 marks**

A hotel runs a website where guests create accounts and store their card details for bookings. The manager is worried about the security of this customer data.

Discuss the threats to the hotel's network and customer data, and the measures the hotel could use to protect against them. Justify your recommendations. **[12]**

END OF QUESTIONS