MODULE E NETWORKS · E7

IP addressing and MAC addresses

Original practice questions · 20 marks · ~25 minutes · OCR J277 spec 1.3.2

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**. All addresses on this sheet are made up.

1

Total: 3 marks

(a) State the purpose of an IP address. **[1]**

(b) State the number of bits in an IPv4 address and in an IPv6 address. **[2]**

IPv4: ..... bits

IPv6: ..... bits

2

Total: 4 marks

A network technician finds four addresses in a log file.

(a) Tick (✓) **one** box in each row to show what each address is. **[4]**

Address	IPv4 address	IPv6 address	MAC address	Not a valid address
192.168.40.17				
3A:7C:19:D2:5E:08				
10.12.256.3				
2001:0DB8:7A21:0000:0000:3C4F:0912:BE07				

3

Total: 6 marks

(a) Describe the format of an IPv4 address. **[3]**

(b) Describe the format of a MAC address. **[3]**

4 Total: 4 marks

A small architecture office has a LAN. A switch connects six computers and a printer. A router connects the LAN to the internet. An architect on one of the computers downloads a drawing from a web server in another country.

(a) Explain how IP addresses and MAC addresses are used to get the drawing from the web server to the architect's computer. **[4]**

5 Total: 3 marks

(a) Explain why IPv6 was introduced. **[2]**

(b) Give **one** difference between how an IPv6 address and an IPv4 address are written. **[1]**

Total for this worksheet: 20 marks