MODULE E NETWORKS · E11

Layers and the 4-layer TCP/IP model

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**.

1

Total: 6 marks

(a) State what is meant by a **layer** in network communication. **[2]**

(b) Tick (✓) **one** box in each row to show whether each statement about layers is true or false. **[4]**

Statement	True	False
Each layer has its own protocols		
A layer uses the services of the layer above it		
When data is sent, it passes down through the layers on the sending device		
If one layer is changed, every other layer must also be rewritten		

2

Total: 3 marks

An accountancy firm's desktop computer sends a file to a printer server in another building. Both devices use the TCP/IP model.

(a) State how many layers there are in the TCP/IP model. **[1]**

(b) Describe how the file passes through the layers from the desktop computer to the printer server. **[2]**

3 **Total: 4 marks**

A team of programmers is writing the networking software for a new range of smart thermostats. The software is divided into layers.

(a) Explain **two** benefits to the programmers of dividing the software into layers. **[4]**

1

2

4 **Total: 3 marks**

A warehouse connects its handheld barcode scanners to its network with cables. The warehouse manager replaces the cables with a wireless connection. The stock-control program on the scanners is not changed.

(a) Explain how the use of layers means the stock-control program still works after the change. **[3]**

5 **Total: 2 marks**

A dental surgery buys a laptop from one manufacturer and a network printer from a different manufacturer.

(a) Explain why the laptop and the printer can communicate, even though they were made by different manufacturers. **[2]**

6 **Total: 2 marks**

A network technician at a train operator is told that messages between two offices are not arriving.

(a) Explain how the use of layers helps the technician to find and fix the problem. **[2]**

Total for this worksheet: 20 marks