

ITS 413 – QUIZ 1 ANSWERS

First name: _____ Last name: _____

ID: _____

Total Marks: _____

out of 10

Question 1 [1 mark each]

- | | | |
|---|-------------|--------------|
| a) Digital Subscriber Line (DSL) technologies always provide a higher download speed than upload speed. | True | False |
| b) Synchronous Digital Hierarchy (SDH) is common access network technology used by end-users to access the Internet. | True | False |
| c) Synchronous Digital Hierarchy (SDH) provides higher data rates than Plesionchronous Digital Hierarchy (PDH). | True | False |
| d) Plesionchronous Digital Hierarchy (PDH) provides higher data rates than Synchronous Digital Hierarchy (SDH). | True | False |
| e) Asynchronous Transfer Mode (ATM) is an example of a circuit switching based core network technology. | True | False |
| f) Asynchronous Transfer Mode (ATM) is an example of a packet switching based core network technology. | True | False |
| g) If data rate was the primary factor, you would choose X.25 (instead of Frame Relay or ATM) for a core network. | True | False |
| h) If data rate was the primary factor, you would choose ATM (instead of Frame Relay or X.25) for a core network. | True | False |
| i) The advantage of coaxial cable (versus optical fibre) for Internet access is that cable networks use of the existing Public Switched Telephone Network (PSTN). | True | False |
| j) Except for some of the very small number of remaining dial-up modems users, the Public Switched Telephone Network (PSTN) is no longer used for Internet access by end-users. | True | False |
| k) ADSL is a point-to-multipoint network technology. | True | False |
| l) ADSL is a point-to-point network technology. | True | False |
| m) IEEE 802.11 wireless LAN technologies can be used for LANs as well as an alternative to point-to-point wired WAN links. | True | False |
| n) WiMax is a short range wireless communications technology. | True | False |
| o) WiMax can be used for fixed point-to-point wireless links | True | False |
| p) IEEE 802.15.4 (also referred to as ZigBee) is used for fixed point-to-point wireless links. | True | False |
| q) IEEE 802.15.4 (also referred to as ZigBee) is used for wireless wide area networks. | True | False |
| r) Mobile telephones cannot provide data rates equivalent to ADSL. | True | False |
| s) GPRS is an example of 3G mobile telephone system. | True | False |
| t) UMTS is an example of 3G mobile telephone system. | True | False |

Question [1 mark]

What is a disadvantage of optical fibre as a wired access network technology? Explain.

Answer

New network infrastructure generally has to be installed (e.g. optical fibres) – the existing copper telephone network cannot be used. This leads to higher cost.

Question [1 mark]

Name two technologies that are commonly used for LANs.

Answer

Ethernet, IEEE 802.11 Wireless LAN.

Question [1 mark]

Name three wired access network technologies.

Answer

Ethernet, Dial-up, DSL, Coaxial, Optical Fibre

Question [1 mark]

Explain an advantage of ADSL (versus optical fibre).

Answer

ADSL makes use of the existing copper telephone network (optical fibre requires new cabling to be installed) and therefore is cheaper.

Question [1 mark]

Excluding cost, list three factors that are important when considering the design of wireless networks.

Answer

Frequency, Data Rate, Transmission Range, Power

Question [1 mark]

Explain an advantage of using directional antennas (versus omni-directional antennas).

Answer

Power is concentrated in one direction, therefore you can achieve a larger transmission range.

Question [1 mark]

In the past, SIIT had an DSL connection between Bangkadi and Rangsit. List two alternative technologies which would be suitable for this link.

Answer

WiMax, PDH, SDH, Gigabit Ethernet

Question [1 mark]

A common network topology (in Japan at least) is using optical fibre to the building, and then using a copper line within the building (e.g. to each apartment). Name an appropriate technology for use over the copper line.

Answer

Ethernet, VDSL