

ITS 413 – QUIZ 0 ANSWERS

First name: _____ Last name: _____

ID: _____

Total Marks: _____

out of 12

Question 1 [3 marks]

Draw *either* one of the following protocol stacks, giving the name for each layer:

- the Open Systems Interconnection (OSI) seven layer protocol stack
- the TCP/IP (or Internet) five layer protocol stack

Answer

OSI Stack	TCP/IP Stack
Application	Application
Presentation	
Session	
Transport	Transport
Network	Network
Data Link	Data Link
Physical	Physical

Question 2 [3 marks]

One reason for breaking a large piece of data (for example 10,000 bytes) into small packets (for example, 10 packets of 1000 bytes each) is to reduce the number of retransmissions if errors occur. What is a disadvantage of sending small packets? Explain your answer.

Disadvantage [1 mark]:

Answer

Additional overhead due to packet headers, hence lower efficiency.

Explanation [2 marks]:

Answer

Each packet needs a (normally fixed size) header. For smaller packets, the header will be a greater proportion of the traffic sent, hence less efficient in sending data.

Question 3 [6 marks]

Selecting from the eight protocols below, for each sentence write the protocol that most accurately completes the sentence.

The protocols you can select from are:

1. Transmission Control Protocol (TCP)
2. Open Shortest Path First (OSPF)
3. Domain Name System (DNS)
4. Internet Protocol (IP)
5. Carrier Sense Multiple Access (CSMA)
6. Address Resolution Protocol (ARP)
7. HyperText Transfer Protocol (HTTP)
8. User Datagram Protocol (UDP)

Complete these sentences with the above protocols (write the acronym, for example: TCP):

__DNS__ maps human-readable addresses to Internet Protocol (IP) addresses.

__CSMA__ aims to provide equal access to nodes contending for a channel.

__TCP__ provides flow control and congestion control in the Internet.

__ARP__ maps Internet Protocol (IP) addresses to hardware addresses (used at MAC layer).

__OSPF__ distributes routing information in networks.

__TCP__ provides a reliable stream-oriented service.