

# ITS 413 – QUIZ 1

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

ID: \_\_\_\_\_

Total Marks: \_\_\_\_\_

out of 14

- Write your name and ID in the space provided at the top of the sheet.
- Answer the questions on this sheet(s) only, using the space given.

## Question 1 [4 marks]

- a) Draw the Internet protocol stack and write the name of each layer in the stack.
- b) What layer in the above stack is Carrier Sense Multiple Access (CSMA) from Ethernet located?

## Question 2 [2 marks]

What protocol, of the four options listed (circle the correct answer), is most likely to be used to connect between the following sites:

- a) Your house and your ISP (for example, TOT-ISP, TT&T, True)?

ADSL or Fast Ethernet or SDH STM-4 or PDH E1

- b) Your ISP and an International Internet Gateway in Thailand?

ADSL or Fast Ethernet or SDH STM-4 or PDH E1

**Question 3** [4 marks]

Selecting from the 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. Plesionchronous Digital Hierarchy (PDH)
3. Synchronous Digital Hierarchy (SDH)
4. Point-to-Point Protocol (PPP)
5. Domain Name System (DNS)
6. Asynchronous Transfer Mode (ATM)
7. Carrier Sense Multiple Access (CSMA)
8. Address Resolution Protocol (ARP)
9. 10Gb Ethernet (10GBE)
10. User Datagram Protocol (UDP)

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

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

\_\_\_\_\_ can be considered a “legacy” or “old” transport network technology.

\_\_\_\_\_ carries IP packets over SDH when “Packet over SDH” is used.

\_\_\_\_\_ can be used for either a LAN or WAN (transport network).

\_\_\_\_\_ aims to provide equal access to nodes contending for a channel.

\_\_\_\_\_ includes features for automatically switching to another link in case of error.

\_\_\_\_\_ provides flow control in the Internet.

\_\_\_\_\_ includes in-built quality of service control mechanisms.

**Question 4** [4 marks]

Two approaches for transporting IP traffic over optical networks are: IP over ATM; and IP over WDM. Give an advantages and disadvantage of each approach.

*IP over ATM*

Advantage:

Disadvantage:

*IP over WDM*

Advantage:

Disadvantage: