

ITS 323 – QUIZ 5 (IT) ANSWERS

First name: _____ Last name: _____

ID: _____

Total Marks: _____

out of 10

Question 1 [9 marks (1.5 each)]

True or False:

- a) The aim of Medium Access Control (MAC) in LANs is to ensure only one user (computer) transmits at a time. T / F
- b) The IEEE 802 series of LAN standards focus on the Physical Layer, Data Link Layer and Network Layer of the OSI model. T / F
- c) The following hexadecimal address is an example of an Ethernet (or MAC) address: 00:17:31:E5:89 T / F
- d) A bridge is typically used to interconnect two LANs using different network technologies (e.g. ATM to IEEE 802.3 Ethernet). T / F
- e) IP includes an ARQ (Automatic Repeat reQuest) retransmission scheme to perform error control. T / F
- f) The main difference between a switch and a hub is that a switch can allow two users (computers) to transmit at the same time (whereas a hub cannot). T / F

Answers

True – the assumption of most MACs is that a computer can only successfully receive one transmission at a time (if two or more computers transmit, a collision occurs at the receiver). Therefore the aim of the MAC is to ensure only one computer transmits at a time.

False – IEEE 802 focuses only on Physical and Data Link layer, not on Network Layer

False – The hexadecimal address has 10 digits, and each digit represents 4 bits, hence a 40-bit address – IEEE uses a 48-bit address.

False – A bridge is typically used when the same LAN technologies are to be connected.

False – IP doesn't perform any retransmission or error control.

True – Since a frame sent to a switch is only sent to the specific destination (rather than all computers, as with a hub), when one computer transmits, another computer (which isn't the destination) can be transmitting at the same time.

Question 2 [1 mark]

Which *two* of the following mechanisms are mechanisms for performing dynamic (that is, asynchronous) Medium Access Control (circle only two answers):

- a) Reservation-based MAC
- b) Switching-based MAC
- c) Flooding-based MAC
- d) Contention-based MAC

- e) IP-based MAC
- f) Data Link Layer-based MAC

Answer

Reservation-based MAC and Contention-based MAC