

COE 441 – Quiz # 4

Name:

ID#:

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- 1) in the context of IEEE 802.3 standard, briefly describe the following terms:
- a) slot time

 - b) inter frame gap

 - c) carrier extension
- 2) A simple medium access control protocol would be to use a fixed assignment time-division multiplexing (TDM) scheme. Each station is assigned one time slot per cycle for transmission. The length of each slot is the time to transmit 200 bits plus the end-to-end propagation delay. Assume a propagation speed is 200 m/ μ s. For N stations, find the throughput per station for a 1-km, 10 Mbps baseband bus.
- 3) From the twisted-pair medium perspective, distinguish among Ethernet, Fast Ethernet and Gigabit Ethernet.

	twisted-pair	Signal encoding	Justification
Ethernet	2-pair (Cat3,4, UTP)	Manchester	20 Mbaud is the equivalent rate which can be carried by two Cat 3 pairs
Fast Ethernet	2-pair (Cat5 UTP, STP) 4-pair (Cat4 or 3 UTP)	MLT-3 8B6T, NRZ	To concentrate the signal energy in the 30 MHz band and below Equivalent rate is 75 Mbaud. Three pairs will be used and each carries 25 Mbaud
Gigabit Ethernet	4-pair (Cat5 UTP)	4D-PAM5	To have more information sent with each symbol. Each cable will carry 250Mbps