COMSATS University Islamabad, Dhamtour Campus
Department of Computer Science
Mid-Term Examination – (Fall 2024)

Class: SE 3A & CS-4B
Subject: Computer Networks
Total Time Allowed: 90 Minutes
Name: _____

Date: 16th Nov, 2024
Instructor: Ayesha Irshad
Max Marks: 30 Marks
Reg. # _____

SECTION-A [CLO-1, Marks 10]

Q1. a) Differentiate, the OSI model from the TCP/IP model in terms of the number of layers and real-world application. **(Marks:05)**

b) Explain how SMTP and IMAP work on the email server. **(Marks:05)**

SECTION-B [CLO-2, Marks 10]

Q2. a) Using Diagrams, Illustrate the key differences between HTTP/1.1 and HTTP/1. **(Marks:05)**

b) Consider a network link with the following specifications: **(Marks:05)**

I. Distance between nodes: 1,000 kilometers
II. Propagation speed of the signal: 2 x 10^6 meters/second
III. Data packet size: 1,250 bytes
IV. Transmission rate of the link: 2 Mbps (megabits per second)

Calculate the Total Network Delay,If there is an additional queuing delay of 10 milliseconds and a processing delay of 3 milliseconds, calculate the total delay experienced by the data packet during transmission.

SECTION-C [CLO-3, Marks 10]

3. a) Describe the purpose of port numbers and IP addresses in socket communication. **(Marks:05)**

b) If the IP address is **172.16.45.67**: **(Marks:05)**

I. Determine the class of the IP address.
II. What is the default subnet mask for this class?
III. What is the range of valid host IP addresses for this network?

Best of Luck

13/11/24

CamScanner