Computer Networks
Spring 2025
Assignment#6 (6C & 6A)

Due Date: Tuesday, 6th May, 2025
Submission Mode & Time: Handwritten solutions to be submitted during the

lecture.

Please note the following:

1. No exceptions to the above date and time will be allowed. Inability to submit the assignment by the required time will result in zero marks.

2. To ensure self-completion of assignments and discourage plagiarism, the instructor or the relevant TA may randomly contact you and ask for an explanation of your answers. Where plagiarism and/or cheating is evident, you will be referred to the departmental disciplinary committee. In extreme cases of plagiarism an F may be awarded immediately with further referral to university disciplinary committee.

3. All solutions must be **hand-written.**

4. **Assignment Solution Submission**: In case of **in person / physical lectures at the campus**, hard copy of the hand-written assignment's solutions will be submitted by **hand** by each student to the Instructor / TA directly during the lecture on the due date.

PART-1

Use the following text for completion of this part of the assignment:
Computer Networking - A Top-Down Approach 8th Edition by Kurose & Ross.

Solve the following problems from the back of **Chapter 6**. Every Question has equal marksi.e.

Problems: (6*6 = 36 marks) **[CLO 3]**
Show proper calculations of the following questions

P1, P5, P6, P14, P22, P26

PART - 2

Question 2 [14Marks] [CLO 3]

Consider the cyclic redundancy check (CRC) based error-detecting scheme with the generator polynomial $x^3 + x + 1$.

Suppose the message $m_4m_3m_2m_1m_0 = 11000$ is to be transmitted. The check bits c_2, c_1, c_0 are appended at the end of the message by the transmitter using the CRC scheme.

The transmitted bit string is denoted by $m_4m_3m_2m_1m_0c_2c_1c_0$.

The task is to find the value of the check bit sequence $c_2c_1c_0$.