

**Computer Networks**  
**Fall 2025**  
**Assignment#6 (5A & 5C)**

**Due Date:** Thursday, 27<sup>th</sup> November, 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 the 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 8<sup>th</sup> Edition by Kurose & Ross.**

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

**Problems: (6\*6 = 36 marks)**

**[CLO 3]**

P1, P5, P6, P14, P22, P26

## PART - 2

**Question: 01 [14 Marks]**

**[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  $c_2c_1c_0$ .