Assignment # 3 (For BS-CS: Sections C-G and N)
(CS-3001 Computer Networks – Fall-2022)

Due Date and Time: Tuesday, 1st November, 2022 (02:25 pm) Marks: 10

Instructions:

- *Late submission and soft copy submission will not be accepted. In case of potential absence on the submission day, you need to accordingly plan and submit it earlier than deadline.*
- *Only handwritten attempts will be graded, i.e., printed attempts will not be graded*
- *Only the attempts submitted to Mr. Fahad or Mr. Amir in the Academic office (till the deadline) will be considered, i.e., the submissions that will be slided beneath instructors' office doors or submitted elsewhere will not be graded.*
- *There will be no credit if the given requirements are changed*
- *Your solution will be evaluated in comparison with the best solution*
- *Whenever a calculation is involved, your solution should show complete steps and a final answer. There will be significant marks for the correct final answer (as far as assignments are concerned).*
- *You must write your roll number, name, and section (CNet Course section) on your submitted attempt.*

For the problems below, consider your roll number.

Problem 1: [3 Marks]

Solve P22 of Chapter 2 of the textbook (8th Edition) after doing the following modification:
In the problem, the upload rate of the server is 30 Mbps. You should not consider this value and instead you should consider the upload rate equal to
20 + (your roll number modulus 15) Mbps.
For example, if your roll number is 20i-0125, then the upload rate is 20 + (125 modulus 15) = 25 Mbps.

Problem 2: [3 Marks]

Solve P31 of Chapter 3 of the textbook (8th Edition) after doing the following modification:
In the problem, alpha = 0.125 and beta = 0.25. You should not consider these values and instead you should consider the following values:
alpha = (100 + (your Student ID modulus 32)) / 1000
beta = (200 + (your Student ID modulus 45)) / 1000
For example, if your Student ID is 20i-0125, then alpha is (100 + (125 modulus 32)) / 1000 = 0.129 and
beta = (200 + (125 modulus 45)) / 1000 = 0.235

Problem 3: [4 Marks]

Solve P48 of Chapter 3 of the textbook (8th Edition) after doing the following modification:
In the 6th line of the problem, replace the TCP segment size of 1500 with the TCP segment size equal to
1400 + (your roll number modulus 24) bytes.
For example, if your roll number is 20i-0125, then the segment size is 1400 + (125 modulus 24) = 1405 bytes.