Computer Networks – Fall 2018

Assignment 2 (Section A and B)

Due Date: Monday, November 19th 2018.
Time: 08:00 AM for Section A, 09:30 AM for Section B.
Weightage: 5%

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. If 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. The assignment is divided into two parts. Part – 1 requires submission of a written report and Part – 2 will be a verbal Q&A based on the contents of your work.
4. A maximum of three students can participate in this assignment. However, you have the option of doing it individually if you want.

Part 1: To be submitted in hard-copy.

A written (typed) report of not more than five pages (6000 words), excluding references, figure and table captions on any <u>one</u> of the following topics.

1. **TCP Cubic Congestion Control**
   An explanation of TCP Cubic, working principle including congestion control algorithm and a sample scenario where TCP Cubic would outperform both TCP Vegas and TCP Tahoe.

2. **Network Monitoring and Design**
   As part of this report, you have to document the working topology of our campus computer network (FAST-NUCES, Lhr). The deliverable includes the following:
   - A topology diagram of CS department building indicating the placement of routers/switches, wireless access points and their linkage with local data center servers (properly labeled with link speeds).
   - Identification of performance bottlenecks.
   - Recommendations regarding improvements in topology to improve service delivery (e.g., additional link capacity, routers, switches, placement of access points, etc.)

Please quote all relevant resources that you have used in answering the above questions using standard IEEE referencing style.

Part 2
Q&A based on your submission. Each group will be allocated a time-slot.