

# Computer Network

## Spring 2019

### Problem Set 2

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This problem set has six questions. Please answer them clearly and concisely. Your solutions must be your own.

Send your solution file to TA's email address with both **subject** and **file-name** formatted like ID-NAME-PS2-SOLUTION.DOC/.PDF. Turn in your solution before **Wednesday, May 8, 2019**.

## 1 Short-answer questions

- (1) Tell the difference and similarity between ARQ Protocol and Sliding Window Protocol. And tell the difference between Go-Back-N method and Selective Repeat method.
- (2) Explain those terms: Repeaters, Hubs, Bridges, Switches, Routers and Gateways.
- (3) Explain the CSMA protocol, and show the possible strategies when confronting with collision.

## 2 Calculation

- (1) CRC Checksum: Assume codeword as 11100011, and the generating function as  $G(x) = x^5 + x^4 + x + 1$ , show the process of generating CRC checksum. If we received code as 1110001110010, is there any error in this code? Show the checking process.

(2) Compute a multicast spanning tree for router C in the following network for a group with members at routers A, B, C, D, E, F, I, and K.

