ECE358: Computer Networks

Winter 2018

Project 2: Data Link Layers and ARQ Protocols

Date of submission:2018-03-13

Submitted by: YuCheng Liu

Student ID: y698liu

Student name: Liu, YuCheng

Waterloo Email address: y698liu@uwaterloo.ca

Marks received:

Marked by:

Table of Contents

[ABP 3](#_Toc508919956)

[Question 1: Implement the ABP sender 3](#_Toc508919957)

[i) Consider the scenario where BER = 0. Use your simulator to compute the throughput (bits/sec) 6](#_Toc508919958)

[as a function of Δ for C = 5Mb/s, and two values of 2τ (10ms and 500ms). 6](#_Toc508919959)

[ii) Now, repeat the set of experiments in (i) with BER = 1.0e-5 and BER = 1.0e-4. 6](#_Toc508919960)

[ABP\_NAK 6](#_Toc508919961)

[Question 2: Implement the ABP\_NAK sender 6](#_Toc508919962)

[i) Consider the scenario where BER = 0. Use your simulator to compute the throughput (bits/sec) 7](#_Toc508919963)

[as a function of Δ for C = 5Mb/s, and two values of 2τ (10ms and 500ms). 7](#_Toc508919964)

[ii) Now, repeat the set of experiments in (i) with BER = 1.0e-5 and BER = 1.0e-4. 7](#_Toc508919965)

[8](#_Toc508919966)

[GBN 9](#_Toc508919967)

[Question 3: Implement the GBN sender 9](#_Toc508919968)

[i) Take N = 4 and BER = 0. Use your simulator to compute the throughput (bits/sec) as a function of Δ for C = 5Mb/s, and two values of 2τ (10ms and 500ms). 11](#_Toc508919969)

[ii) Repeat Question 1.ii for GBN 11](#_Toc508919970)

# Question 1: Protocol Header Analysis

0017 a486 2900 74d0 2b26 ff76 0800 4500

003c 366d 4000 4006 6a19 8161 380f 8368

5d5d b06e 0050 2244 81dc 0000 0000 a002

16d0 1d0b 0000 0204 05b4 0402 080a 6d5e

b7b1 0000 0000 0103 0307

Ethernet header:

00 17 a4 86 29 00: Ethernet destination address is 00 17 a4 86 29 00(unicast)

74 d0 2b 26 ff 76: Ethernet source address: 74 d0 2b 26 ff 76(unicast)

08 00: The payload type is IP(0x0800)