Comp 445 Theory Assignment 1

1. yes. It will slow user’s transfer if there’s no heavy uses on the network by taking one route rather than all the routes, even though the user can only use at higher speed. Circuit segment idle if not used by call(no sharing).

2. Cable used Time-Division Multiplexing (TDM) and DSL used Frequency-Division Multiplexing(FMD). Cable give user more bandwidth, without worry about the number of users. DSL is better service, we can use Fibre from IDP to the neighbour and keep the normal copper wire.

3. If it’s a simple request then use non-persistent connection, if the request is more complicated, then use persistent

4. (1). DDoS attack: use many attacks.

(2). Interception: intercept a request and send bad data.

(3). Cache poisoning: replace real data.

5.

6. (a). 10^7/(2.5\*10^8) = 0.04 sec

(b). L/R = 2/5 \* 8 = 3.2

7. (a). 10^7/(2.5\*10^8) = 0.04 sec

(b). (2/4 + 2/5 + 2/6) \* 2 = 2.46666667

(c). (2/4 + 2/5 + 2/6) \*10 = 12.33333

8. BitTorrent have tracker and torrent. Churn is peers may come and go. It need requesting chunks and sending chunks tit-for-tat

9.

|  | 10 | 100 | 1000 |
| --- | --- | --- | --- |
| 300 KBS | 7500 | 50000 | 500000 |
| 700 kbs | 7500 | 50000 | 500000 |
| 2 Mbps | 7500 | 50000 | 500000 |
|  | 10 | 100 | 1000 |
| 300 KBS | 7500 | 25000 | 45454.54545 |
| 700 kbs | 7500 | 15000 | 20547.94521 |
| 2 Mbps | 7500 | 7500 | 7500 |