Homework Ch 4

1. 1. this is in favor of the data gram network because it would not require setting up a new downstream path or deleting an old down stream path, all you have to do is update the routing tables to account for the failed routers. VC is not ideal because it requires the router that is upstream of the failed router to create a new downstream vector router, and it causes complications for the routers that are downstream of the failed router because they each have to remove the failed router. It’s just too much effort/work
   2. A connection oriented network VC is better here. Connectionless cannot maintain a stipend of capacity between the source and destination. It has to know the characteristics of the traffic of all sessions passing through the link. Connection based networks can do that.
   3. Datagrams have more control of the traffic overhead, this is because the packet headers need to rote the datagrams through the network.

10)A)

|  |  |
| --- | --- |
| Prefix Match | Link Interface |
| 11100000 00 | 0 |
| 11100000 01000000 | 1 |
| 1110000 | 2 |
| 11100001 1 | 3 |
| Otherwise | 3 |

* 1. 1. Prefix match for 5th entry at link interface 3 - otherwise
     2. prefix match is the third entry at link interface 2
     3. prefix match for the link interface 3 – 111000011

11) i)00 = 00000000 -> 00111111 = 2^6 = 64

ii) 010 = 01000000 -> 01011111 = 2^5 = 32

iii) 011 = 01100000 -> 01111111 = 2^5 = 32

iv) 10 = 10000000 -> 10111111 = 2^6 = 64 = 96

v) 11 = 11000000 -> 11111111 = 2^6 = 64

16) a) 128.119.40.128(10000000), 128.119.40.191(10111111)

b)subnet prefixes:

128.119.40.64/28 , 128.119.40.80/28 , 128.119.40.96/28 , 128.119.40.112/28

19) 2400-byte datagram into a link that has an MTU of 700 bytes.

⌈(2400‐20)/(700-20)] = 4

each fragment’s id is 422, all the fragments should be 700 bytes, while the last one should be 360, offsets will be 0,85,170,255, and the flags for all of them except the last fragment will be 1,where the last one is 0.