Final Review

V.   Medium Access Sublayer (MAC)
 A.   "The Channel Allocation Problem"
   1.   assumptions
 B.   LAN Performance Notation
   1.   relative propagation time - a
   2.   S, I, and G   {throughput, input load, offered load}
 C.   ALOHA
 D.   Slotted ALOHA
 E.   CSMA
   1.   non-persistent
   2.   1-persistent
   3.   p-persistent
 F.   CSMA/CD and Ethernet
   1.   binary exponential backoff
   2.   Ethernet evolution (10Base5, 10Base2, 1Base5, 10BaseT)
-----------------------------Second Exam Ended Here--------------------------
 G.   Token Ring
   1.   802.5 token ring
          a. priorities
 H.   Switched Ethernet
 I.   Bridges
            1.   backward learning
            2.   collision domains
VI.   High Speed LANs
 A.   FDDI
   1.   differences from 802.5 token ring
   2.   4B/5B encoding
   3.   dual ring
 B.   Fast Ethernet
   1.   100 Base T4
          a.   four twisted pairs
          b.   8B/6T encoding
          c.   33-1/3 Mbps per pair
   2.   100 Base TX
   3.   100 Base FX
 C.   Gigabit Ethernet
   1.   Fiber Channel technology
   2.   8B/10B encoding
   3.   1000 Base SX
   4.   1000 Base LX
   5.   1000 Base CX
   6.   1000 Base T
   7.   carrier extension

   8.   frame bursting
   9.   buffered distributor

VII. SONET
  A.   optical fiber standard
  1.   common master clock
  2.   byte interleaved TDM
  B.   SONET architecture
  1.   ADM - add/drop multiplexor
  2.   REG - regenerator for optical signals
  3.   section/line/path
  C.   SONET frame
  1.   SPE Synchronous Payload Envelope
  2.   Overhead
  D.   Multiplexing hierarchy
  1.   up to STS-3 and beyond
  2.   down to virtual tributaries

VIII. ATM {Asynchronous Transfer Mode}
  A.   Basics
  1.   53 byte cell-switching technology
  2.   virtual circuits
  B.   Conceptual Model Assumptions
  C.   Header Details
  1.   UNI versus NNI
  2.   VPI/VCI
  D.   Architecture
  1.   variety of traffic types
       a.   original four types
       b.   revised traffic types
  2.   AALs
       a.   AAL1
       b.   AAL3/4
       c.   AAL5
  3.   CS and SAR
  E.   Cell Switching Issues
  1.   cells not reordered
  2.   non-blocking switches
  3.   PVCs versus SVCs

IX.   Network Layer
A.   Routing
  1.   Non-Adaptive
       a.   flooding
       b.   static
           i.   Dijkstra's Shortest Path routing algorithm
  2.   Adaptive
       a.   centralized   RCC

           b.   distributed
                i.   intradomain routing
                ii.   interdomain routing
3.   Distance Vector Routing
      a.   RIP
4. Link State Routing
      a. OSPF
5.Border Gateway Protocols (BGP)
X.   Transport Layer
A.   TCP Sliding Windows
B.   TCP Congestion Control