Computer Networks topics and references

Please consider the following topic and references for the comprehensive exam.

Topics include:

MAC protocols for wired and Wireless Access: fast review of Ethernet and Token Ring networks; ad-hoc networks (MANETs), Wireless Access and Mobility: cellular Networks, mobile-IP) vs ad-hoc networks (MANETs); Wireless Sensor networks (WSN); ATM; and cellular Networks.

Routing protocols for wired and wireless networks:
stability/convergence, link-state vs distance-vector vs link-vector, conventional routing (RIP, IGRP, BGP, OSPF), proactive vs reactive routing (on demand routing protocols for MANET and WSN, multi-path and type-of-service (ToS) routing, quality-of-service (QoS) or constrained-based routing; Internet QoS routing, interaction with reservation (RSVP), multicast routing with reservation, fast routing/switching (Tag Switching, MPLS)

Computer network protocols optimization including TCP congestion control and timeOut adaptivity, Multimedia transmission and SIP entity adaptation for MANET, cross layer optimization.

Networks Management and protection including: QoS provisioning such as DiffServ, InetServ, and MPLS, network security, network project management, network performance measurement and analysis, agents for network management and control.

References are:

1) **L. Peterson and B. Daive, "Computer Networks : A Systems Approach". edition, Morgan Kaufmann, latest edition.**

2) ***A. Tanenbaum, "Computert Networks", latest edition, Prentice Hail, latest edition.***
3) ***Douglas Comer, "Internetworking with TCP/IP Vol. I: Principles, Protocols, and Architecture", Prentice Hall, latest edition.***
4) **Uyless Black, "TCP/IP and Related Protocol", McGraw-Hill, latest edition.**
5) **All papers, presentations, and other materials that have been studied during the course.**