

IT-473 F High Speed Networks

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Class Work: 50

Exam: 100

Total: 150

Duration of Exam: 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

UNIT 1

Gigabit Ethernet → Overview of fast Ethernet, Gigabit Ethernet – overview, specifications, layered protocol architecture, network design using Gigabit Ethernet, applications, 10GB Ethernet – overview, layered protocol architecture, applications.

Wireless Networks → Existing and emerging standards, Wireless LAN(802.11), Broadband Wireless(802.16), Bluetooth(802.15) their layered protocol architecture and security. Mobile Networks – GSM, CDMA and GPRS

UNIT 2

Fibre Channel → Fibre channel physical characteristics – topologies & ports, layered protocol architecture, class of service, technology comparison, SAN overview and architecture.

Frame Relay → Protocol architecture, frame format, routing, congestion control.

UNIT 3

ISDN & B-ISDN → ISDN - Channels, interfaces, addressing, protocol architecture, services and B-ISDN

ATM → Virtual circuits, cell switching, reference model, traffic management.

UNIT 4

Internet Layer → IPV4 and IPV6, IP addressing, ARP, IP routing(OSPF & BGP), internet multicasting, mobile IP.

Transport Layer → UDP/TCP protocols & architecture, TCP connection management, wireless TCP.

Application Layer → DNS, FTP, Voice over IP, audio & video compression.

Reference & Text Books:

1. James P.G. Sterbenz and Joseph D. Touch, High-Speed Networking: A Systematic Approach to High-Bandwidth Low Latency Communication, Wiley, 2001
2. **William-Stallings**, High-Speed Networks TCP/IP and ATM Design Principles, Prentice Hall; 1st edition, 1998.