# COMPUTER NETWORKS – II

**Subject   Code**

:

|                | **06CS64/IS665** |
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**IA   Marks**

:

25

No. of Lecture Hrs./ Week

:

04

Exam Hours

**COMPUTER NETWORKS – II**

:

03

Total No. of Lecture Hrs.

:

52

Exam Marks

:

100

PART - A

## UNIT - 1

**PACKET-SWITCHING NETWORKS – 1:** Network services and internal network operations; Packet network topology; Datagrams and virtual circuits; Routing in packet networks; Shortest-path routing; ATM networks.

**6 Hours**

## UNIT - 2

**PACKET-SWITCHING NETWORKS – 2, TCP / IP - 1:** Traffic management at the packet level; Traffic management at the flow level; Traffic management at the flow-aggregate level. The TCP / IP architecture; The Internet protocol.

**6 Hours**

## UNIT - 3

**TCP / IP - 2:** IPv6; User datagram protocol; Transmission control protocol; Internet routing protocols; Multicast routing; DHCP, NAT, and Mobile IP.

**7 Hours**

**UNIT - 4**

**ATM NETWORKS:** Why ATM? BISDN reference model; ATM layer; ATM adaptation layer; ATM signaling; PNNI routing; Classical IP over ATM.

 **7 Hours**

**PART - B**

**UNIT - 5**

**NETWORK MANAGEMENT, SECURITY:** Network management overview; SNMP; Structure of Management information; MIB; Remote network monitoring. Security and cryptographic algorithms; Security protocols; Cryptographic algorithms.

**6 Hours**

## UNIT - 6

**QoS, Resource Allocation, VPNs, Tunneling, Overlay Networks:** Overview of QOS; Integrated services QoS; Differentiated services QoS; Resource allocation.Virtual Private Networks; Multiprotocol Label switching; Overlay networks.

**7 Hours**

## UNIT - 7

**COMPRESSION OF DIGITAL VOICE AND VIDEO, VOIP, MULTIMEDIA NETWORKING:** Overview of data compression; Digital voice and compression; Still images and JPEG compression; Moving images and MPEG compression; Limits of compression with loss; Compression methods without loss; Case Study: FAX compression for transmission.

Overview of IP telephony; VoIP signaling protocols; Real-Time media transport protocols; Distributed multimedia networking; SCTP.

**7 Hours**

## UNIT - 8

**MOBILE AD-HOC NETWORKS, WIRELESS SENSOR NETWORKS:** Overview of wireless adhoc networks; Routing in adhoc networks; Routing protocols for adhoc networks; security of adhoc networks. Sensor networks and protocol structures; Communication energy model; Clustering protocols; Routing protocols; Zigbee technology and IEEE 802.15.4

**6 Hours**

**TEXT BOOKS:**

1. **Communication    Networks – Fundamental Concepts and Key architectures –** Alb erto    Leon-Garcia and Indra Widjaja:, 2 nd

Edition, Tata McGraw-Hill,    2004.

2. Computer    and Communication Networks – Nader F. Mir:, Pearson Education, 2007.

**REFERENCE BOOKS:**

1. **Data    Communications and Networking** – Behrouz A. Forouzan – 4th    Edition, Tata McGraw-Hill, 2006.

2. **Data and Computer Communication** – William Stallings – 8th Edition, Pearson Education, 2007.

1. **Computer    Networks A Systems Approach** – Larry L. Peterson and Bruce S. David – 4 th Edition, Elsevier, 2007.

2. **Introduction    to Data Communications and Networking** – Wayne Tomasi – Pearson Education, 2005.

Written by Administrator
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