

**SARDAR PATEL UNIVERSITY**  
**Programme: MCA**  
**Semester: IV**  
**Syllabus with effect from: November 2014**

<b>Paper Code:</b> PS04CMCA03	<b>Total Credit: 4</b>
<b>Title Of Paper:</b> Computer Networks - II	

Unit	Description in detail	Weighting (%)
<b>1</b>	<b>High Speed LANs, ATM and Satellite Communication</b> Fast Ethernet, Gigabit Ethernet Communication Satellites: Geosynchronous Satellites, Medium - Earth Orbit Satellites, Low-Earth Orbit Satellites, Satellites versus Fiber The Public Switched Telephone Network : The structure, the local loop, modems, ADSL, wireless local loops	
<b>2</b>	<b>Routing and Congestion Control</b> Virtual Circuits and Datagrams, Routing Techniques, Congestion Control	
<b>3</b>	<b>Internetworking</b> Introduction and Issues that arise in Internetworking Different ways in which networks differ, Internetworking using Concatenated Virtual Circuits Connectionless Internetworking, Tunneling, Internetwork Routing, Fragmentation, Firewalls	
<b>4</b>	<b>Network Security</b> Introduction, Traditional Cryptography, Fundamental Cryptographic Principles, Secret-Key Algorithms, Public-Key Algorithms, Virtual Private Networks	
<b>5</b>	<b>Wireless Networks - I</b> Introduction to wireless networks, Principles of wireless network operations Wireless network topologies, Cellular topology, Cell fundamentals Mobility management, Wireless transmission Radio, microwave, infrared, light-wave transmission	
<b>6</b>	<b>Wireless Networks - II</b> The mobile telephone system, Different generations of mobile telephone systems: technologies and applications Mobile data networks : the concepts of GPRS and SMS Wireless LANs, Wireless geolocation systems	

**Basic Text & Reference Books**

- Tanenbaum A. S., Computer Networks, Prentice-Hall of India Pvt. Ltd., New Delhi, 1997.
- Kaveh Pahlavan and Prashant Krishnamurthy: Principles of Wireless Networks, Pearson Education Asia, 2002.
- Stallings W., Data and Computer Communications, 3<sup>rd</sup> Edition, Macmillan Pub. Company, New York, 1991.
- Behrouz Forouzan, Introduction to Data Communications and Networking, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 1998.

