SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar
Programme & Subject : B.Sc. CA & IT
Semester – VI
US06CIIT23 : Computer Networks
(Syllabus Effective from June 2020)

Credits : 4 **External : 70 Marks**
Contact Hrs per Week : 4 **University Examination Duration: 3 Hrs**
All units carry equal weightage

Unit	Description in detail
I	**Introduction Computer Network** Computer networks : definition and advantages Classification of computer networks Introduction and differences among Local Area Networks (LANs), Metropolitan Area Networks (MANs), Wide Area Networks (WANs) Uses of Computer Networks Meaning of the basic terms : topology, data rate, modulation rate, spectrum, bandwidth, server, host
II	**Data Communication Fundamentals** Various types of transmission media - guided transmission media : magnetic media, twisted pair, coaxial cables, fiber optics Introduction to the concept of modulation, types of modulation, serial transmission vs. parallel transmission, synchronous transmission v/s asynchronous transmission, circuit switching, packet switching The concept of multiplexing, Frequency Division Multiplexing (FDM) vs. Time Division Multiplexing (TDM)
III	**Layered Protocols and Satellite Communication** Protocol significance and hierarchies Design issues for the layers The OSI Reference model Examples of protocols for different layers of the OSI model Introduction to wireless networks Communication satellites Introduction to geosynchronous satellites
IV	**Local Area Network Technology and Networking Devices** Types and characteristics of Local Area Networks LAN Topologies : Bus, Star, Ring, Tree, Complete (Mesh) Introduction to Carrier Sense Multiple Access (CSMA) protocol for LAN functions of various networking components : modems, amplifiers, repeaters, hubs, switches, bridges, routers, gateway

Basic Text and Reference Books:

1. Behrouz Forouzan, Introduction to Data Communications and Networking, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 1998.
2. Tanenbaum A. S., Computer Networks, Prentice-Hall of India Pvt. Ltd., New Delhi, 1997.
3. Stallings W., Data and Computer Communications, 3rd Edition, Macmillan Pub. Company, New York, 1991.