

# SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar

B.C.A. Semester – VI

US06BCA23 : Data Communication and 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
<b>I</b>	<b>INTRODUCTION</b> Computer networks : definition, advantages-disadvantages Classification of computer networks Categories of computer network : local area networks, metropolitan area networks, wide area networks Meaning of the basic terms : topology, data rate, modulation rate, spectrum, bandwidth, server, host
<b>II</b>	<b>DATA COMMUNICATION FUNDAMENTALS</b> Various types of transmission media Guided transmission media : magnetic media Twisted pair, coaxial cables, fiber optics Serial transmission vs. Parallel transmission Circuit switching, packet switching, message switching Concept of multiplexing : frequency division multiplexing, time division multiplexing
<b>III</b>	<b>LAYERED PROTOCOLS AND SATELLITE COMMUNICATION</b> Protocol significance and hierarchies Design issues for the layers The osi reference model Examples of protocols for different layers of the osi model Introduction communication satellites and categories (leo, meo, geo)
<b>IV</b>	<b>INTRODUCTION TO WIRELESS NETWORKS AND NETWORKING DEVICES</b> Introduction to wireless networks : bluetooth Lan topologies with advantages and disadvantages : bus, star, ring, tree, mesh Introduction to carrier sense multiple access (csma), carrier sense multiple access with collision detection (csma/cd) protocol for lan Functions of various networking components : modems, amplifiers, repeaters, hubs, Switches, routers, gateway, bridges

## Basic Text & Reference Books :-

1. Behrouz forouzan, introduction to data communications and networking, tata mcgraw-hill publishing co. Ltd., new delhi, 1998, 4<sup>th</sup> edition.
2. Tanenbaum a. S., computer networks, 3<sup>rd</sup> edition prentice-hall of india pvt. Ltd., new delhi, 1997.
3. Stallings w., data and computer communications, 3<sup>rd</sup> edition, macmillan pub. Company, new york, 1991.