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| |  |  |  | | --- | --- | --- | | 13CS3102 | - | DATA COMMUNICATIONS AND COMPUTER NETWORKS | | | | | | | | |
|  |  | |  | | | | |
| Hours / Week | : | 4 | |  | Sessional Marks | : | 40 |
| Credits | : | 4 | |  | End Examination Marks | : | 60 |

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| **UNIT - I** |
| **Introduction**: Network applications, network hardware, network software, Reference models: OSI and TCP/IP.  **The Physical Layer**: Theoretical basis for communication, Transmission impairments, Channel Capacity, Transmission Media: Guided and Unguided, Signal encoding techniques. |
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| **UNIT – II** |
| **The Data Link Layer**: Design issues, Error detection and correction, Elementary data link protocols, Sliding window protocols, Example data link protocols - HDLC, The data link layer in the internet.  **The Medium Access Sublayer**: Channel allocations problem, multiple access protocols, Ethernet, Data Link Layer switching, Wireless LAN, Broadband Wireless, Bluetooth. |
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| **UNIT – III** |
| **The Network Layer**: Network layer design issues, Routing Algorithms, Congestion control algorithms, Internetworking, The network layer in the internet (IPv4 and IPv6), Quality of Service. |
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| **UNIT – IV** |
| **The Transport Layer**: Transport services, elements of transport protocol, Simple Transport Protocol, **Internet transport layer protocols**: UDP and TCP. |
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| **UNIT – V** |
| **The Application Layer**: Domain name system, electronic mail, World Wide Web.  **Application Layer Protocols**: HTTP, SNMP, FTP, SMTP. |
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| TEXT BOOKS |
| 1. A. S. Tanenbaum (2003), Computer Networks, 4th edition, Pearson Education/ PHI, New Delhi, India. |
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| REFERENCE BOOKS |
| 1. Behrouz A. Forouzan (2006), Data communication and Networking, 4thEdition, Mc.Graw-Hill, India. 2. Kurose, Ross (2010), Computer Networking: A top down approach, Pearson Education, India. |