

1902CS403

COMPUTER NETWORKS

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MODULE I INTRODUCTION

9 Hours

Data Communications – Network Criteria - Components of Networks -Types of Connection - Direction of Data Flow - Network Topologies– Protocols and standards–Categories of Networks –Network Models: The OSI Model - TCP/IP Protocol Suite - Addressing - Networking Devices.

MODULE II PHYSICAL AND DATA LINK LAYER

10 Hours

Physical Layer- Types of errors-Media Access Control: CSMA, CSMA/CD, CSMA/CA-Ethernet-Wireless LAN- Bluetooth - Flow Control-Error Control - Error Detection Techniques- HDLC and other Data Link Protocols

MODULE III NETWORK LAYER

9 Hours

Internetworking - IPv4 - IPv6 –Network Layer: Delivery, Forwarding and Routing-Routing Protocols - IP Protocols: ARP and RARP, BOOTP, ICMP, DHCP

MODULE IV TRANSPORT LAYER

9 Hours

Overview of Transport layer, Reliable/Unreliable Transmission, TCP, UDP,– TCP Connection Management - Flow Control – Congestion Control, Congestion Avoidance and Quality of Service: (QoS).

MODULE V APPLICATION LAYER

8 Hours

Domain Name System (DNS): Domain Name Space - DNS in the Internet - HTTP – Email: SMTP, POP3and IMAP - File Transfer Protocol -SNMP-Web Services.

TOTAL: 45 HOURS

REFERENCES:

- 1.BehrouzA.Forouzan, Data Communication and Networking, 5th Edition, Tata McGraw-Hill, 2013
- 2.James F.Kurose and Keith W.Ross, Computer Networking: A Top-Down Approach Featuring the Internet, Pearson Education, 2017
- 3.Larry L.Peterson and Bruce S.Davie, Computer Networks, Elsevier, 2009
- 4.Andrew S.Tanenbaum, Computer Networks, Pearson Education, 2010
- 5.William Stallings, Data and Computer Communication, Pearson Education, 2007
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