

## BCA-364: Internet Technologies

**Maximum Marks: 100**

**Minimum Pass Marks: 35**

**Time: 3 hours**

**External: 80**

**Internal: 20**

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit. All questions will carry equal marks.

### UNIT – I

Internet: Introduction; History; Internet Services; TCP/IP: Architecture, Layers, Protocols; TCP/IP model versus OSI Model; World Wide Web (WWW) - The Client Side, The Server Side, Creating and Searching Information on the Web, Popular Search Engines, URL, HTTP, Web Browsers, Chat & Bulletin Board, USENET & NNTP (Network News Transfer Protocol); Internet vs. Intranet;

### UNIT – II

TCP, UDP and IP Protocols, Port Numbers; Format of TCP, UDP and IP; IPv4 addressing; The need for IPv6; IPv6 addressing and packet format; TCP Services; TCP Connection Management; Remote Procedure Call; IP Address Resolution- DNS; Domain Name Space; DNS Mapping; Recursive and Iterative Resolution; Mapping Internet Addresses to Physical Addresses: ARP, RARP, DHCP; ICMP; IGMP;

### UNIT – III

Application Layer: Electronic Mail: Architecture; Protocols - SMTP, MIME, POP, IMAP; Web Based Mail; File Access and Transfer: FTP, Anonymous FTP, TFTP, NFS; Remote Login using TELNET; Voice and Video over IP: RTP, RTCP, IP Telephony and Signaling, RSVP;

### UNIT – IV

Routing in Internet: RIP, OSPF, BGP; Internet Multicasting; Mobile IP; Private Network Interconnection: Network Address Translation (NAT), Virtual Private Network (VPN); Internet Management and SNMP; Internet Security: E-Mail Security; Web Security; Firewall; Introduction to IPsec and SSL;

### TEXT BOOKS

- Douglas E. Comer, “Internetworking with TCP/IP Volume – I, Principles, Protocols, and Architectures”, Fourth Edition, Pearson Education.
- Andrew S. Tanenbaum, “Computer Networks”, Pearson Education.

### REFERENCE BOOKS:

- Behrouz A Forouzan, “Data Communications and Networking”, McGraw Hill.
- Michael A. Gallo, William M. Hancock, “Computer Communications and Networking Technologies”, CENGAGE Learning.
- James F. Kurose, Keith W. Ross, Computer Networking, A Top-Down Approach Featuring the Internet, Pearson Education.
- “Introduction to Data Communications and Networking”, Wayne Tomasi, Pearson Education.