**13CS4107-COMPUTER NETWORKS**

Credits: 4

Hours /week: 4 Hrs Sessional Marks: 40

Univ.Exam.Duration: 3Hrs Univ.Examination.Marks: 60

**UNIT-I**

Theoretical basis for communication, Maximum data rate of channel, communications media, Networks goals, Application of networks, protocol hierarchies, OSI reference model, Design issues for the layers in the model, Modulation and keying alternatives, multiplexing, modems, parallel and serial data transmission, handshake procedures. Rs 232C, V.14/V.28, Rs449 interfaces, X.21, IEEE protocols, Link switching techniques.

**UNIT-II**

Local Area Networks:Local communication alternatives, static and dynamic channel allocation in LANs, the ALOHA protocols, LAN protocols, IEEE logical link control, Ethernet, Token bus and Token ring protocols.

Data link layer: Design issues Error detection and correction, sliding window protocols. Wide area network standards, SDLC, HDLC, X 25 protocols.

**UNIT-III**

Network layer Design issues, Routing algorithms, congestion control algorithms, Internetworking, Transport layer design issues, connection management, Transport protocol X 25, session layer design issues, Remote procedure cell.

**UNIT-IV**

Presentation layer Abstract syntax notation, Data compression techniques, Cryptography Application such as file transfer, Electronic mail and virtual terminals, X 400 protocol for electrical messaging overview of ARPANET, MAP, TOP, Novell Netware, PC/NOS, Unix support for networking.

**UNIT-V**

World wide web, web browsers, web servers, uniform resource locator, Home pages, Basics of HTML, creating links, Anatomy of URL and kinds of URLs, HTML assignments, Editors and converters, New features of HTML, creating tables, Using images, Using external media, writing and designing web pages, Introduction to CGI scripts.

**TEXT BOOKS:**

1. Computer Networks – Andrew S Tanenbaum, 4th edition. Pearson Education/PHI

2. Data Communications and Networking – Behrouz A.Forouzan, Third edition, TMH.

**REFERENCES:**

1. An Engineering Approach to Computer Networks – S.Keshav,2nd edition, Pearson Education
2. Understanding communications and Networks,3rd edition, W.A. Shay, Thomson