

## **13EC41E2-COMPUTER NETWORKS**

(ECE)

**Lectures/Week: 4Hrs.**  
**End Exam Duration: 3Hrs**

**Credits: 4**  
**Sessional Marks: 40**  
**End Exam Marks: 60**

### **UNIT-I**

**INTRODUCTION:** 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, RS 449 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 call.

### **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**

**APPLICATIONS:** 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, Pearson Education/PHI
2. Data Communications and Networking – Behrouz A.Forouzan, TMH.

### **REFERENCES:**

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