**13EC41E3-DATA AND COMPUTER COMMUNICATION**

 Credits: 4

Hours /week: 4 Hrs Sessional Marks: 40

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

**UNIT-I**

**Data Communication:** Introduction – History of data communications – Data communication circuits – Data communication codes – Error control- Synchronization – Data communications hardware – serial interfaces – Transmission media and data modem.

**UNIT-II**

**Data communication protocols:** Introduction – public data network – ISO protocol hierarchy – CCITT X.25 user to network interface PROTOCOL – Local area networks – Metropolitan area networks – wide area networks.

**UNIT-III**

**Digital Multiplexing :** Tiem – division multiplexing – TI digital carrier system – CCITT time – division – Multiplexed carrier system – codecs – T- carriers – frame synchronization – Bit interleaving versus word interleaving. Frequency division multiplexing. At & Ts FDM hierarchy – Composite base band signal – L carriers – Hybrid data.

**UNIT-IV**

**Multiple Access**: TDMA – FDMA – CDMA – CSMA/CD – Multiple access information flow – Demand – assignment multiple access algorithms – ALOHA, polling techniques, slotted ALOHA.

**UNIT-V**

**Spread – spectrum techniques:** The beneficial attributes of spread – spectrum systems, model for spread – spectrum interference rejection – Pseudonoise sequences.

Direct – sequence spread – spectrum systems – example of direct sequencing – processing gain and performance.

Frequency hopping systems- frequency hopping example – fast hopping versus slow hopping.

Synchronization – Acquisition, tracking.

**TEXT BOOKS:**

1. Wayne Temasi, ‘Advance Electronic Communications systems’, Pearson Education(I,II and III).
2. Bernard Sklar, Digital communications – Fundamentals and Applications, 2nd Edition , Pearson Education (IV and V).

**REFERENCE BOOKS:**

1. Stallings – Data and Computer Communication, 6th Edition, Pearson Education.
2. Taub & Shelling, Principles of Communication system, McGraw Hill.