**Guidelines for B.Sc. (Hons) Computer Science, CBCS – III Semester**

**C-VII: Computer Networks**

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| --- | --- | --- | --- | --- |
| Sr. No. | Topic | Chapter Sections/ Pages | References | No. of Lectures |
| 1. | Introduction to Computer Networks | 1.1 to 1.2,  2.1 to 2-4 | [1] | 6 |
| 2. | Data Communication Fundamentals and Techniques | 3.1, 3.4 to 3.5,  4.1 except multilevel and multi transition line encoding, 4.2 upto encoding, 4.3,  5.1,  6.1 upto multiplexing process, pg.169 to 170,  7.1 to 7.2 | [1] | 10 |
| 3. | Network Switching Techniques and Access Mechanisms | 2.5.5 | [2] | 5 |
| 9.2 to 9.3, 9.5 | [1] |
| 4. | Data Link Layer- Funcitons and Protocols | 3.1 to 3.2 | [2] | 11 |
| 11.3 to 11.5, 11.7 upto transition phase | [1] |
| 5. | Multiple Access Protocols and Networks | 4.2.2, 4.3 upto 4.3.1, 4.3.3 to 4.3.4 | [2] | 7 |
| 15.1 to 15.2 | [1] |
| 6. | Network Layer Functions and Protocols | 5.1 to 5.2.4, 5.6.1, 5.6.2 upto Subnets, 5.6.3 | [2] | 10 |
| 7. | Transport Layer Functions and Protocols | 6.1.1, 6.4 upto 6.4.1, 6.5 upto 6.5.6 | [2] | 6 |
| 8. | Overview of Application Layer Protocols | 7.1 upto 7.1.1, 7.3 upto URLs, 7.3.4 | [2] | 5 |

References:

[1] Data Communication and Networking : B. A. Forouzan, 4th Edition, TMH, 2007.

[2] Computer Networks : Andrew S. Tanenbaum, 4th Edition, Pearson Education, 2003.

**Computer Science LAB (C-VII) : Computer Networks Lab**

**Revised Practical List**

**Practical: 60 Lectures**

1. Simulate Cyclic Redundancy Check (CRC) error detection algorithm for noisy channel.
2. Simulate Hamming code for a given input message.
3. Simulate and implement stop and wait protocol for noisy channel.
4. Simulate and implement go back n sliding window protocol.
5. Simulate and implement selective repeat sliding window protocol.
6. Simulate Classful Addressing by taking the IP address (Dotted-Decimal notation) as input and print the corresponding class.