**SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL**

**LESSON-PLAN**

**Class: BCA 3rd YEAR Semester: 5th**

**Subject:** Data Communication and Networking ( **BCA 303) Session: 2020-21**

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| **Lecture Number** | **Topic** |
| **1-4** | Introduction to Computer Communications and Networking Technologies |
| **4-5** | Uses of Computer Networks; Network Devices |
| **6-9** | Nodes, and Hosts; Types of Computer Networks and their Topologies |
| **10-12** | Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services |
| **13-15** | Network Applications and Application Protocols; Computer Communications |
| **16-17** | Networking Models: Decentralized and Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model, WebBased Model |
| **18-20** | Network Architecture and the OSI Reference Model, TCP/IP reference model |
| **21-24** | Example Networks: The Internet, X.25, Frame Relay, ATM. |
| **25-27** | Analog and Digital Communications Concepts: Concept of data, signal, channel, bid-rate |
| **28-29** | maximum data-rate of channel, Representing Data as Analog Signals |
| **30** | Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate |
| **31-34** | Asynchrous and synchrous transmission, data encoding techniques, Modulation techniques |
| **35-37** | Digital Carrier Systems; Guided and Wireless Transmission Media; Communication Satellites |
| **38-40** | Switching and Multiplexing; Dialup Networking; Analog Modem Concepts; DSL Service. |
| **41-45** | Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction; |
| **46-48** | Sliding Window Protocols; Media Access Control: Random Access Protocols, Token Passing Protocols; Token Ring |
| **49-53** | Introduction to LAN technologies: Ethernet, switched Ethernet, VLAN, fast Ethernet, gigabit Ethernet, token ring |
| **54-57** | FDDI, Wireless LANs; Bluetooth; Network Hardware Components: Connectors, Transceivers, Repeaters |
| **58-60** | Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways. |
| **61-62** | Network Layer and Routing Concepts: Virtual Circuits and Datagrams;  |
| **63-67** | Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control Algorithms; Internetworking; |
| **68-70** | Network Security Issues: Security threats; Encryption Methods; Authentication |
| **71-75** | Symmetric – Key Algorithms; Public-Key Algorithms. |

 **Shweta**

 **(Asst Prof. in CS)**