

**Acharya Nagarjuna University**  
**Nagarjuna Nagar, Guntur Dist., A.P.**  
**B.Sc. Computer Maintenance Syllabus, CBSC from 2015-'16**  
**w.e.f.2015-2016 (Modified in April 2016)**

**SEMESTER –VI**  
**PAPER VII a- BASICS OF NETWORKS**

**UNIT - I**

**Components of the Computer Network.**

Introduction to Computer Networks – Advantages of Networking, Peer-to-Peer and Client/Server Network. Network Topologies –. Type of Networks and Internet, Ethernet, Wi-Fi, Bluetooth, Mobile Networking, Wire and wireless Networking.

**UNIT - II**

**Crimping & Punching**

Communication Media & Connectors –Unshielded twisted-pair (UTP), shielded twisted-pair (STP), Fiber Optic and coaxial cable: RJ-45, RJ-11, BNC. Understanding color codes of CAT5 cable.

**UNIT - III**

**Configuration of Data communication equipments.**

Network Components –Modems, Firewall, Hubs, Bridges, Routers, Gateways, Repeaters, Transceivers, Switches, Access point, etc. –their types, functions, advantages and applications.  
IP Routing in Network RIP IGRP

**UNIT - IV**

**Applications** - Sessions and presentation aspects - DNS, Telnet, rlogin, FTP, SMTP – WWW- Basics of Firewalls

**UNIT-V**

Frame Relay-Packet switching networks-Frame Relay networks, Asynchronous transfer mode- ATM protocol Architecture-ATM Logical connection-ATM cells-ATM service categories – ATM adaption layer(AAL)

**References:**

1. Larry L.Peterson & Bruce S.Davie, Computer Networks - A systems Approach, 2nd edition, Harcourt Asia/Morgan Kaufmann, 2000.
2. William Stallings, Data and Computer Communications, 5th edition, PHI,1997.

## **PRACTICAL - HARDWARE & NETWORK LAB**

- 1) Connecting & disconnecting computer peripherals and components & driver installation
- 2) OS installation like Windows XP, Windows 7, 8, 10
- 3) OS installation like FAT, NTFS
- 4) Basic trouble shoots using beep Sound
- 5) Dual OS installation
- 6) Assigning and identifying valid IP Addresses.
- 7) Configure network computers using switch
- 8) Installation of Network Interface Card (NIC).

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**SEMESTER –VI**  
**PAPER VII a- BASICS OF NETWORKS**  
**Model Question Paper**

**Answer any Five Questions.**

**5 X 15= 75 Marks**

1. Explain client / server network model
2. What is the difference between Bluetooth and Wi-Fi?
3. Explain different types of network cable
4. Explain color coding of cat5 cable
5. Explain network components and how they are used
6. How to assign IP routing in network
7. Explain about DNS, FTP in detail
8. Explain basics of firewall in computer network
9. Explain frame relay networking with diagram
10. Explain Asynchronous Transfer Mode protocol Architecture

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**SEMESTER –VI**

**PAPER VIII b:: ADVANCED NETWORK CONCEPTS**

**UNIT – I**

Different Transmission Medias – Ethernet Cards and Standards –Connectors RJ45 – Cross-cabling and Direct cabling.

**UNIT - II**

Networking Components – Hubs –Bridges – Switches – Switching and Forwarding Routers – Brouters - Gateways

**UNIT -III**

Addressing – Sub netting – Domain concepts

**UNIT-IV**

Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP), Hyper Text Transfer Protocol (HTTP), Simple Network Management Protocol (SNMP). LDAP(Lightweight Directory Access Protocol).

**UNIT – V**

Introduction – transport layer – socket introduction - TCP sockets – UDP sockets - raw sockets – Socket options - I/O multiplexing – Name and address conversions

**References:**

1. William Stallings, Data and Computer Communications, 5th edition, PHI,1997.
2. Andrew Tanenbaum Computer Networks PHI

## **PRACTICAL: UNIX AND NETWORK PROGRAMMING LAB**

1. Program using system calls: create, open, read, write, close, stat, fstat, lseek
2. Program to implement inter process communication using pipes
3. Program to perform inter process communication using message queues
4. Program to perform synchronization using semaphores
5. Program using TCP sockets (Client and Server)
6. Program using UDP sockets (Client and Server)

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**SEMESTER –VI**

**PAPER VIII b:: ADVANCED NETWORK CONCEPTS**

**Model Question Paper**

**Answer any Five Questions.**

**5 X 15= 75 Marks**

1. Explain Ethernet Cards and Standards
2. What is the difference between cross cable and straight cable in networks?
3. What is the purpose and functions of network devices?
4. Explain gateway in computer network
5. Explain network addressing and sub netting
6. Define domain? Explain domain concepts in networking
7. Explain Simple Mail Transfer Protocol
8. Explain Lightweight Directory Access Protocol.
9. Explain the various TCP socket options in detail
10. Explain name and address conversions in network