

**INSTRUCTIONS TO PAPER SETTERS:**

1. Question No. 1 should be compulsory and cover the entire syllabus. There should be 10 questions of short answer type of 2 marks each, having at least 2 questions from each unit.
2. Apart from Question No. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions to evaluate analytical/technical skills of candidate. However, student may be asked to attempt only 1 question from each unit. Each question should be 10 marks including subparts, if any.

**OBJECTIVE:**

- To grasp the current directions of computer networks research.
- To fill in gaps in students' networking knowledge.
- To better understand experimental methodology.

**PREREQUISITE:**

- Data Communications and Networking

**UNIT - I**

**Introduction :** Overview of computer network, seven- layer architecture, TCP/IP suite of protocol, etc, Mac protocol for high speed LANS, MAN's & WIRELESS LANs (for example, FDDI, DQDB, HIPPI, Gigabit Ethernet, Wireless Ethernet etc) Fast access technologies.(For example, ADSL, cable Modem Etc.), Wi Fi, Wimax. [No. of hrs: 10]

**UNIT – II**

**IPv6:** Why IPv6, basic protocol, extension & option, support for QS, Security, etc, neighbor discover, auto-configuration, routing, Change to other protocols, Application programming interface for IPV6.6 bone. **ATM:** Introduction, ATM reference Model, AAL layers, AAL0, AA1, AAL2, AAL3/4, AAL5 [No. of hrs: 12]

**UNIT – III**

**Mobility** in network, mobile, Security related issues. **IP Multicasting:** Multicasting routing protocols, address assignment, session discovery, etc. [No. of hrs: 10]

**UNIT-IV**

**TCP extensions** for high – speed networks, transaction – oriented application, other new option in TCP. **Network security at various layers:** Secure-HTTP, SSP, ESP, Authentication header, key distribution protocols, Digital signatures, digital certificates. [No. of hrs: 10]

**TEXT BOOKS:**

1. W. ER. Stevens, "TCP/IP illustrated, Volume 1: The protocols", Addison Wesley, 1994.
2. G. R. Wright, "TCP/IP illustrated volume 2. The Implementation", Addison Wesley , 1995.
3. Frouzan, "TCP/IP Protocol Suite", Tata Mc Grew Hill, 4<sup>th</sup> Ed., 2009.

**REFERENCES:**

1. William Stallings, "Cryptography and Network Security", Pearson Publication.
2. James Martin, Joseph Lebin, Kavanagh Chapman "Asynchronous Transfer Mode: ATM Architecture and Implementation", Prentice Hall PTR, Facsimile Ed.
3. Nader F. Mir, "Computer and Communication Networks", Pearson, 2009.