

Unit - I

Chapter 1 : Basics of Information System 1-1 to 1-15

Syllabus : Importance of information technology in the modern era : Information Concepts, Information versus knowledge, Components of Information System. **Hardware Components of computer system :** Memory (Primary and secondary), Motherboard, Peripherals. **Google Search Engine :** Introduction, Google Search Query. **Applications of Internet Digital Platforms (BHIM, Digi-Locker, m-parivahan, NSDL, Digital Gujarat, passport seva, e-rupi....).**

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Unit - II

Chapter 2 : Digital Logic 2-1 to 2-50

Syllabus : Introduction to digital computers and number system : Binary numbers, Base conversions (Binary, Decimal, Hexadecimal, Octal). **Working of Logic gates :** AND, OR, INVERTER, XOR, XNOR, **Working of Universal Gates :** NAND gate, NOR gate. Simplification of basic logic gates using Universal gates (Both NAND and NOR).

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Syllabus : Basic terminology of information communication : Basic structure ,Transmission modes (Simplex, Half-duplex, Full-duplex). Synchronous and Asynchronous transmission : Serial and Parallel communication. Modulation (Definition and Need) : Types of analog modulation, Types of digital modulation (Diagrams). Multiplexing concept and types : TDM, FDM, OFDM. Wired media : Twisted -pair, Coaxial, Fiber optics, RJ-45 connectors, Ethernet cable : Color code, Straight cable, Cross cable.			4.8	Basics of Modulation	4-12
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**Unit - V****Chapter 5 : Networking****5-1 to 5-66**

Syllabus : OSI Model : Working and Functioning of each layer, Name of protocols supported at each layer, Name of Hardware supported at each layer. **Network Topologies :** Bus, Mesh, Star, Ring, Hybrid. Types of **Computer Networks :** LAN, MAN, WAN. **Network Addressing (IPv4) :** Internet protocol (need, types), Classful addressing scheme, Address space, Notations, Netid, Hostid, Need of IPv6. Introduction to various IEEE 802 standards. **DNS :** Introduction, Need, Domain Names and its types. **Internet and Intranet :** URL, Internet, Intranet, Comparison between Intranet and Internet. **Networking Devices (Types and use) :** Hub, Switch, Router, Bridge, Gateway, Modem, Repeater, Wireless access point, NIC.

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Unit - VI

Chapter 6 : Information Security **6-1 to 6-17**

Syllabus : Need for information security : Definition of various terms of Information Security, Cryptography, Vulnerability, Threat, Attack, Encryption, Decryption, The principles of security and confidentiality, **Integrity, Availability (CIA triad)**, Security services, **Cyber attacks** : Introduction of common types of attacks (Malware, Man-in-the-middle attack, Denial-of-service attack, SQL injection, Zero-day exploit, Phishing, Password cracking) **Cyber Law** : IT Amendment Act 2008 (Section 66 and 67).

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