

**Course: DCA Semester: II**

**Sub Code: 2DCA1 Subject Name: IT Trends and Technologies**

### **UNIT-I**

Introduction to Distributed system, Advantage and Disadvantage of Distributed System, Features Fault Tolerance, High Availability, Consistency, Security, Scalability . Types of failure in Distributed System, Artificial Intelligence and Expert system - Concepts of AI , Applications Of AI, AI in Business Industry, Reasons and Benefits Of BI, BI Technology, Future of BI & Expert Systems, Merits and Demerits of Expert System : Definition, Domain Knowledge, Component Of expert System, Knowledge base and Inference Engine, Expert System Characteristics, Advantages of Expert System: Availability, Explanation ,Fast response, All the Time Response, Reduced Cost , Multiple Expertise, Knowledge Discovery Phases and Techniques. Application of Expert system and AI.

### **UNIT-II**

Introduction to Virtual Reality and multimedia: Introduction what VR, Why VR, Principle of VR, Components of VR System, Reality Engine, Head Mounted Display, Audio Units ,Gloves with Example VR applications, Brief History of virtual reality Flight Simulator Project, Commercial Development Projects. Ultimate Display, Present uses of virtual reality In entertainment, education, Manufacturing, Medicine, Advantage and Disadvantages, What is Multimedia, Component of multimedia. Various software of multimedia. With their features WinRar, VLC Media Player, Adobe Reader, Adobe Flash Player, Nokia Suit, Nero Ultra, Safari, Virtual DJ Pro, Foxi Reader Format Factory.

### **UNIT-III**

E-Commerce: An Introduction, Concepts, Features Advantages to Organization, customer society and Disadvantages Technical and Non Technical Disadvantages., Technology in E- Commerce, Business Model B to B, B to C C to C C to B, B to G ,G to B.

Benefits and impact of e-commerce, Mobile Commerce Introduction, Electronic Payment Systems: Introduction, Types of Electronic Payment Systems Credit Card, Debit Card, Smart Card, E-Money, E-Wallet, Electronic Fund Transfer. Secure E-Commerce, Digital Payment through Adhaar, Bhim App

#### **UNIT-IV**

CELLULAR TRANSMISSION: Cellular network Concept, RF characteristics, Radio Frequency Communications What is RF, Electromagnetic energy waves basics : DB decibel, Line of Sight, Transmit Power, Receiver Sensivity, Data Rate, Definition, Advantages disadvantages , Technology and Hardware need for Wireless Services :

Wireless & Mobile Computing: What is wireless Communication, Components in Wireless communication, How cell phone works, Cellular System Cell, GSM, GPRS, UMTS, LTE, Types of Wireless communication: WPAN, WLAN, WMAN, WWAN with example, Cellular system Architecture: Cell, Cluster, Frequency Reuse, Frequency Reuse, Cell Spitting, Hands Off: Factors Influencing, Different Generation, Priority. Mobile Switching office, Switching Office vs Station, Base Station Definition and characteristics.

#### **UNIT-V**

E-Governance, E-Democracy, Characteristics of Conventional Governance and E Governance, Challenges for E Governance in India: Social, Economical, Technical Challenges. G2B, G2C, G2G Initiative, Government efforts to encourage citizen participation. Privacy and Security Issues, Information security Management: Definition, Need And Basic Goals of Computer Security, Security Attacks, Threats, Vulnerabilities, Threat Sources, Policy, Computer Security Techniques, ISM Framework, ISM Framework Component, Security at data Center: Firewall, Website Security: Anti Virus and Anti Phishing Tools, Physical Office Security: Restricted Access, Digital Divide: Definition, Determinants and Challenges, Introduction of Cyber Crime: Definition, Extent and Impact, Content Related, Copyright and Trademark related offence, Computer

related offence, The challenges in fighting against cyber crime, various site for e-governance.

**TEXT & REFERENCE BOOKS:**

*FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEX LEON & MLEON, VIKAS*

*PUBLICATIONS,*

*FRONTIERS OF ELECTRONIC COMMERCE, BY- KALAKOTA, RAVI; STONE, TOM; WHINSTON, ANDREW B, ADDISON WESLEY PUBLISHING CO, ISBN 8178080575*

*E-COMMERCE AN INDIAN PERSPECTIVE (SECOND EDITION) BY PT JOSEPH, S.J.*

*PRENTICE-HALL OF INDIA*

*RECENT MAGAZINES OF COMPUTERS AND COMMUNICATION*