

## **PhD Computer Science Paper – II Syllabus**

### **UNIT-I Overview of Database Systems:**

File Systems Versus A DBMS- Advantages Of A DBMS- Describing And Storing Data In A DBMS- Structure Of A DBMS Introduction To Database Design: Database Design And E-R Diagrams- Entities, Attributes And Entity Sets- Relationships And Relationship Sets. Introduction To The Relational Model- Integrity Constraints Over Relations- Enforcing Integrity Constraints- Querying Relational Data.

Schema Refinement and Normal Forms: Introduction To Schema Refinement, Functional Dependencies, Reasoning About FD's, Normal Forms.

### **UNIT – II Overview Of Transaction Management and Crash Recovery**

The Acid Properties, Transactions And Schedules, Concurrent Execution Of Transactions, Lock-Based Concurrency Control.

Introduction to Log, Other Recovery-Related Structures, The Write-Ahead Log Protocol, Check pointing, Recovering From A System Crash.

### **UNIT- III**

Networks, The internet, protocols and standards, the OSI model, layers in OSI model, TCP/IP suite, Addressing, Physical Layer: Multiplexing, Transmission media.

Data link layer: Introduction, Block coding, cyclic codes, checksum, framing, flow and error control.

Network Layer: Logical addressing, Internetworking IPV4, IPV6, uni-cast routing protocols, multicast routing protocols.

## **UNIT- IV**

Transport Layer: Process to process delivery TCP and UDP protocols; Congestion, Control Algorithms – General Principles – of Congestion prevention policies. QoS, Techniques to improve QoS.

Application Layer –Name Space, Domain name space, Distribution of Name Space, DNS in internet, Remote Logging, Electronic mail, FTP, HTTP.

### **TEXT BOOKS:**

1. Data Base Management System 3<sup>rd</sup> Edition By Raghu Rama Krishna & J Gehrke
2. Database System Concepts, Abraham Silberschatz, Henry F. Korth, S. Sudarshan, Fifth Edition.
3. Data Communications and Networking – Behrouz A. Forouzan, Fourth Edition TMH, 2006.

### **REFERENCES BOOKS:**

1. Database Management Systems By - Alexi's Leon And Mathews Leon ( Lionvikas -2002)
2. Database Management Systems (Ii Edition) - Gerald. V. Post
3. Modern Database Management (IV Ed) By - F.R.Mc.Fadden, J.A.Hoffer, M.B.Prescott(Addison Wisley 2K)
4. An Engineering Approach to Computer Networks- S.Keshav , 2nd Edition, Pearson Education.
5. Understanding Communications and Networks, 3rd Edition, W.A.Shay, Cengage Learning.
6. Computer and Communication Networks Nader F. Mir, Person Education
7. Computer Networking: A Top-Down Approach Featuring the Internet, James Kurose,K.W.Ross,3<sup>rd</sup> Edition,Pearson Education.