

SCHEME OF TEACHING AND EXAMINATIONS 2019-2020
MASTER OF SCIENCE IN COMPUTER SCIENCE

SECOND SEMESTER

Subject Code	SUBJECTS	Teaching Load Per Week			Credit L+(T+P)/2	Examination Marks							
						Max. Marks				Min. Marks			
		L	T	P		Th	Ses	Pr	Total	Th	Ses	Pr	Total
Paper I	Advanced RDBMS (PL/SQL)	3	2	-	4	100	50		150	40	30		70
Paper II	Advanced Computer Networks	3	2	-	4	100	50		150	40	30		70
Paper III	Web Development using Open Source Scripting Language	3	2	-	4	100	50		150	40	30		70
Paper IV	Formal Automata Theory	3	2	-	4	100	50		150	40	30		70
Paper V	Elective: i. Digital Signal Processing ii. Soft Computing iii. Artificial Intelligence and Expert System iv. Advanced Computer System Architecture	3	2	-	4	100	50		150	40	30		70
Practical I	Practical Based on Paper-I			3x2	3		25	100	125		15	50	65
Practical II	Practical Based on Paper-III			3x2	3		25	100	125		15	50	65
TOTAL		15	10	12	26	500	300	200	1000	200	180	100	480

[Signature]
27.4.19

[Signature]
27/04/19

[Signature]
27.04.19

[Signature]
27.04.19

[Signature]
27/4/19

[Signature]
27/4/19

[Signature]
27/4/19

SECOND SEMESTER : M.Sc.(CS)

Paper I : Advance RDBMS (SQL Programming with Oracle)

Max Marks : 100

Min Marks : 40

UNIT - I : Overview of Database Management -

Advantages of DBMS, Codd rules ,Type of Data Models, Schema and Instances, DBMS Architecture and Data Independence , different kinds of DBMS users, importance of data dictionary, types of database languages.

ER MODEL: - Basic concept, Design issues, Mapping constraints, Keys, ER diagram, weak & strong entity sets, specialization & generalization, aggregation, inheritance, design of ER schema, Reduction of ER schema to tables , Case studies of ER-Modeling

UNIT - II : Relational Algebra & Relational Database Design –

Relation Algebra :- The structure, relation algebra with extended operations, Modification of database , Aggregate function, Null values, Derived relations, views, modification of database,.

Relational Algebra: select, project, cross product different types of joins (inner join, outer joins, self join); set operations, Tuple relational calculus, Domain relational calculus, Simple and complex queries using , Nested subqueries , stand alone and embedded query languages.

Relational Database Design :

Normalization ,Functional dependencies, Join dependencies, Normal forms (1NF, 2NF, 3NF). Boyce Codd Normal form, Decomposition, Multi-Valued Dependencies, 4NF, 5NF. Concepts of Denormalization

UNIT - III : SQL

Introduction database query language ,SQL & its environment , Sql Structure , Data Type

Introduction to SQL constructs (SELECT...FROM, WHERE... GROUP BY... HAVING... ORDERBY...), INSERT, DELETE, UPDATE, DROP, aggregate functions , VIEW definition and use, Temporary tables, Nested queries, and correlated nested queries, Integrity constraints: Not null, unique, check, primary key, foreign key, references, Triggers. Transaction control commands –commit ,Rollback ,Savepoint Embedded SQL and Application Programming Interfaces.

UNIT - IV : PL/SQL

Introduction to PL/SQL variables – literals – data types – advantages of PL/SQL; Control statements : if ; iterative control – loop, while, for , goto ; exit when; Cursors : Types – implicit, explicit – parameterized cursors – cursor attributes; Exceptions: Types – internal , user-defined , handling exceptions – raise statement.

PL/SQL tables and records: Declaring PL/SQL tables - referring PL/SQL tables, inserting and fetching rows using PL/SQL table, deleting rows; records - declaration of records - deleting records; Sub programs: Functions - procedures – input-output parameters; purity functions - packages - package specification - advantages of packages - private and public items - cursors in packages.

[Signature]
27-4-19

[Signature]
27/04/19

[Signature]
27-4-19

[Signature]
27-04-19

[Signature]
27/4/19

[Signature]
27/4/19

[Signature]

UNIT - V : Data Organization & Object oriented database -

Data Organization - Fixed length records, variable length records, Organization of records in files, Indexing: - indexed files -B-tree, B+-tree, and Hashing Techniques.

Object-Oriented Databases: Overview of Object-Oriented concepts, Object identity, Object structure, and type constructors, Encapsulation of operations, Methods, and Persistence, Type hierarchies and Inheritance, Type extents and queries,

Complex objects; Database schema design for OODBMS; OQL,

Persistent programming languages; OODBMS architecture and storage issues; Transactions and Concurrency control, Example of ODBMS,UML Diagram.

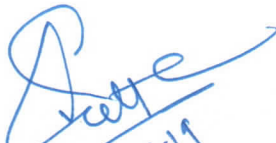
Introduction to distributed database .

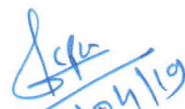
RECOMMENDED BOOKS

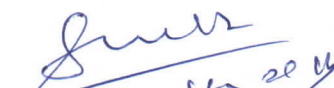
- | | |
|--------------------------------|------------------------------------|
| 1. Database System Concept | -H. Korth and A. Silberschatz, TMH |
| 2. Data Base Management System | - Ivan Bayross |
| 3. Data Base Management System | - James Matin |
| 4. Database Management System | - Leon & Leon, Vikas Publication |


REFERENCE BOOKS


- | | |
|---|---------------------------------------|
| 1. Database Management System | -R. Ramakrishanan |
| 2. Database Management System | -A. K. Majumdar & P.Bhattacharya, TMH |
| 3 . An Introduction to database systems | - Bipin Desai, Galgotia Publication. |

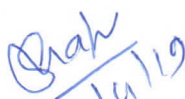

27.4.19


27/04/19


27.04.2019


27-04-19


27/4/19


27/4/19



SECOND SEMESTER : M.Sc.(CS)

Paper II : Advanced Computer Networks

Max Marks : 100

Min Marks : 40

UNIT - I

Introduction to Computer Networking : The Concept of Networking, Data Communication, Required network elements, The role of Standards Organization. Line Configuration, Various Topologies, Transmission Mode, Categories of Networks- LAN, MAN, WAN. The benefits of a Computer Networks.

The OSI and TCP/IP Reference Model : The Concept of Layered Architecture, Design Issues for the Layers. Interfaces and services, Detailed Functions of the Layers. Comparison between OSI and TCP/IP Reference model.

UNIT - II

Transmission of Digital Data : Shannon's and Nyquist theorems for maximum data rate of a channel. Transmission media- Co-axial, UTP, Fiber optic and wireless. Analog and digital data transmission parallel and serial transmission. DTE-DCE interface using RS-232C. Study of modems- 56k and Cable Modem. Modem standards.

Multiplexing and Switching : The Concept of Multiplexing- FDM, TDM, WDM. The Concept of Switching- Circuiting, Message switching, Packet switching.

UNIT - III

Data Link Layer and Routing Algorithms : Line Discipline, Flow Control- stop and wait, sliding window, Go back N, Error Control- ARQ stop and wait, sliding window ARQ. HDLC, SLIP, PPP. Multiple access protocols- ALOHA, Slotted ALOHA, CSMA/CD. IEEE standards for LAN's and MAN's. The IP protocol, and its header. IP address classes and subnet mask.

The concept of ICMP, ARP, RARP, RSVP, CIDR and Ipv6. : Routing algorithms- shortest path first, Distance Vector, Link State. Congestion Control- The leaky bucket and Token bucket Algorithms.

UNIT - IV

Transport Layer: The Concept of client and Server in terms of Socket addressing in Transport layer. Two way and three-way handshaking. TCP header. Network Performance Issues. The Concept of Domain Name System, Various Resource Records. Architecture and services of E-mail (RFC-822 and MIME). The Concept of World Wide Web- server side and client side.

ATM: The concept of ATM, ATM Adoption layers- AAL1, AAL2, AAL3/4, AAL5, Comparison of AAL protocols. Cell formats for UNI and NNI. Service Categories, Quality of service, Congestion Control in ATM.

[Handwritten signatures and dates]
27/04/19
27-04-19
27-04-19
27/4/19
27/04/19
27/04/19

UNIT - V

Comparative study of Networking Technologies: X.25, Frame Relay, ATM, SONET, SMDS, ISDN.

Network Security: The importance of Security in Networking, traditional cryptography, Data Encryption standards, RSA Algorithm.

BOOKS RECOMMENDED

- | | |
|---|--------------------|
| 1. Computer Networks | -A S Tanenbaum |
| 2. Data Communication and Networking | -Forouzan |
| 3. Computer Network and System Approach | -Larry L. Pererson |

REFERENCE BOOKS

- | | |
|---|------------------|
| 1. Computer Network: A Top Down Approach Featuring the Internet | -James F. Kurose |
| 2. Computer and Communication Networks | - Nader F. Mir |

[Signature]
27-4-19

[Signature]
27/04/19

[Signature]
27-04-2019

[Signature]
27-04-19

[Signature]
27/4/19

[Signature]
27/4/19

[Signature]

SECOND SEMESTER : M.Sc.(CS)

Paper III : Web Development Using Open Source Scripting Language

Max Marks : 100

Min Marks : 40

UNIT-I: Webpage Designing

HTML : Introduction to HTML, historical context and justification for HTML, Basic structure of an HTML document , Elements of HTML, HTML Tag and Attributes, Working with Text , Lists, Tables and Frames , Hyperlinks, Images and Multimedia, Working with Forms and Controls. Static V/S Dynamic Websites, Introduction to DHTML

CSS : Concept of CSS , Creating Style Sheet , ways of Implementing CSS, CSS Properties , Selector, CSS Id and Class, CSS Styling -Background, Text Format, Controlling Fonts, Working with block elements and objects , Working with Lists and Tables , Box Model(Introduction, Border properties, Padding Properties, Margin properties)

UNIT-II: Event Handling and Validation

Java Script : What is JavaScript, Comparison between Java, JavaScript & VB Script, The Document Object Model (DOM), Introduction to Objects and Methods, The hierarchy of JavaScript Objects, window Object , document Object, Outputting Text with JavaScript, JavaScript HTML events and event listeners,

JavaScript Validation : JavaScript Form Validation, Validate Numeric Input, Automatic HTML Form Validation, Data Validation, HTML Constraint Validation

UNIT III – Introduction to PHP

PHP: Evaluation of PHP, Basic Syntax, Defining Variable and Constant, Data type , Operator and Expression , Global Variables ,

Conditional Statement & Looping Statement: If - Else, Switch, While, for , for each loop

Function: Function, Call by value and Call by reference, Recursive function, inbuilt Functions,

String: Creating and accessing String, Searching & Replacing String, Formatting String, String Library Function

Arrays : Types of Arrays, Enumerated Arrays, Associative array, Iteration Multi-dimensional array, Array function and SPL

UNIT IV – Advanced PHP

Handling HTML Form Data, Hidden field, Dealing with Multi-value Field, File uploaded form, Redirecting a form after submission, PHP File include, PHP file require, difference between include and require, Session Management , Cookies, PHP FTP, PHP HTTP.

Exception Handling - PHP Exception and Error, Difference Between fatal error and warning, Try, catch, throw

[Handwritten signatures and dates in blue ink:]
Dutta 27-4-19
Saha 27/04/19
Sinha 27-04-19
Bera 27/4/19
Bera 27/4/19
Bera 27/4/19

UNIT V: Database Connectivity and Website Hosting

Database Connectivity with MySQL : Introduction to RDBMS, Connection PHP with MySQL Database , Performing basic database operation(DML) (Insert, Delete, Update, Select) with PHP, Setting query parameter ,Executing query in PHP

Website Hosting - Website Hosting Basics, Domain Name Registration, Configuring DNS, Website uploading and publishing, Web page performance, Search engines, Monitoring and Security

BOOKS RECOMMENDED

- 1) Head First PHP & MySQL - Lynn Beighley & Michael Morrison
- 2) Learning PHP, MySQL & JavaScript with j Query, CSS - Robin Nixon
- 3) HTML5 Black Book, Covers CSS3, Java Script, XML, XHTML, AJAX, PHP and jQuery
-DT Editorial Services

REFERENCE BOOKS

- 1) PHP: The Complete Reference - Steven Holzner
- 2) Mastering HTML, CSS & Javascript Web Publishing - Laura Lemay & Rafe Colburn

Prate
27-4-19

Sya
27/04/19

Suresh
27-04-2019

Arjun
27-04-19

Ramya
27/4/19

Prak
27/4/19

Arin

SECOND SEMESTER : M.Sc.(CS)

Paper IV : Formal Automata Theory

Max Marks : 100

Min Marks : 40

UNIT I: Fundamentals and Finite Automata

Strings, Alphabet, Language, Operations, Finite state machine, definitions, finite automaton model, acceptance of strings, and languages, deterministic finite automaton and non deterministic finite automaton, transition diagrams and Language recognizers.

NFA with \hat{I} transitions - Significance, acceptance of languages. Conversions and Equivalence : Equivalence between NFA with and without \hat{I} transitions, NFA to DFA conversion, minimisation of FSM, equivalence between two FSM's, Finite Automata with output- Moore and Melay machines.

UNIT II: Regular Languages and Grammar Formalism

Regular sets, regular expressions, identity rules, Constructing finite Automata for a given regular expressions, Conversion of Finite Automata to Regular expressions. Pumping lemma of regular sets, closure properties of regular sets (proofs not required).

Regular grammars-right linear and left linear grammars, equivalence between regular linear grammar and FA, inter conversion, Context free grammar, derivation trees, sentential forms. Right most and leftmost derivation of strings.

UNIT III: Context Free Grammars and Push Down Automata

Ambiguity in context free grammars. Minimisation of Context Free Grammars. Chomsky normal form, Greiback normal form, Pumping Lemma for Context Free Languages. Enumeration of properties of CFL (proofs omitted).

Push down automata, definition, model, acceptance of CFL, Acceptance by final state and acceptance by empty state and its equivalence. Equivalence of CFL and PDA, interconversion. (Proofs not required). Introduction to DCFL and DPDA.

UNIT IV: Turing Machine

Turing Machine, definition, model, design of TM, Computable functions, recursively enumerable languages. Church's hypothesis, counter machine, types of Turing machines (proofs not required). linear bounded automata and context sensitive language.

UNIT V: Computability Theory

Chomsky hierarchy of languages, linear bounded automata and context sensitive language, LR(0) grammar, decidability of, problems, Universal Turing Machine, decidability of posts. Correspondence problem, Turing reducibility, Definition of P and NP problems, NP complete and NP hard problems.

RECOMMENDED BOOKS

1. Hopcroft and Ullman: Introduction to automata theory, Languages & Computation, Narosha Publication house.
2. Mishra & Chandrashekharan: Theory of Computer Science, Automata Lanauages & computation, 2nd Ed PHI, New Delhi.
3. Introduction to Theory of Computation –Sipser 2nd edition Thomson

[Signature]
27-4-19

[Signature]
27/04/19

[Signature]
27-4-19

[Signature]
27-04-19

[Signature]
22/4/19

[Signature]
27/4/19

[Signature]

REFERENCES BOOKS

1. Introduction to Formal languages Automata Theory and Computation -Kamala Krithivasan Rama R.
2. Introduction to Computer Theory -Daniel I.A. Cohen, John Wiley.
3. Theory of Computation: A Problem - Solving Approach - Kavi Mahesh, Wiley India Pvt. Ltd.
4. Elements of Theory of Computation - Lewis H.P. & Papadimition C.H. Pearson /PHI.

[Handwritten signatures and dates in blue ink:]
27/04/19
27/04/2019
27-04-19
28/4/19
27/4/19
Kavi

SECOND SEMESTER : M.Sc.(CS)
Paper V : Elective 1. Digital Signal Processing

Max Marks : 100

Min Marks : 40

UNIT I: Signals and Systems

Basic elements of DSP – concepts of frequency in Analog and Digital Signals – sampling theorem –
Discrete – time signals, systems – Analysis of discrete time LTI systems – Z transform –
Convolution (linear and circular) – Correlation.

UNIT II: Frequency Transformations

Introduction to DFT – Properties of DFT – Filtering methods based on DFT –
FFT Algorithms Decimation – in – time Algorithms, Decimation – in – frequency Algorithms –
Use of FFT in Linear Filtering – DCT.

UNIT III: IIR Filter Design

Structures of IIR – Analog filter design – Discrete time IIR filter from analog filter – IIR
filter design by Impulse Invariance, Bilinear transformation, Approximation of derivatives
– (HPF, BPF, BRF) filter design using frequency translation

UNIT IV: FIR Filter Design

Structures of FIR – Linear phase FIR filter – Filter design using windowing techniques,
Frequency sampling techniques – Finite word length effects in digital Filters

UNIT V: Applications

Multirate Signal processing – Speech compression – Adaptive filter – Musical sound processing –
Image enhancement.

RECOMMENDED BOOKS

1. John G. Proakis & Dimitris G. Manolakis, “Digital Signal Processing – Principles, Algorithms & Applications”, Fourth edition, Pearson Education / Prentice Hall, 2007.
2. Emmanuel C. Ifeachor, & Barrie W. Jervis, “Digital Signal Processing”, Second edition, Pearson Education / Prentice Hall, 2002.

REFERENCE BOOKS

1. Alan V. Oppenheim, Ronald W. Schaffer & John R. Buck, “Discrete Time Signal Processing”, Pearson Education, 2nd edition, 2005.
2. Andreas Antoniou, “Digital Signal Processing”, Tata McGraw Hill, 2001

[Signature]
27-4-19

[Signature]
27/04/19

[Signature]
27-04-2019

[Signature]
27-04-19

[Signature]
27/4/19

[Signature]
27/4/19

[Signature]

SECOND SEMESTER : M.Sc.(CS)

Paper V : Elective 2. Soft Computing

Max Marks : 100

Min Marks : 40

UNIT - I : Introduction to Soft computing and Fuzzy Logic System

Introduction of soft computing, Soft computing vs. hard computing, various types of soft computing techniques, Importance of soft computing, Applications of soft computing.

Fuzzy Sets Operation Of Fuzzy Sets, Properties Of Fuzzy Sets, Fuzzy Relations, Fuzzy Arithmetic, Membership Functions, Fuzzy To Crisp Conversion. Fuzzy Logic, Fuzzy Rule Based Systems, Fuzzy Decision Making, Fuzzy Database, Fuzzy Intelligent System.

UNIT - II : Introduction to Artificial Neural Networks

Introduction to Artificial Neural Network, Artificial Neuron, Classification of Artificial Neural Network, Architecture of a Artificial Neural Network, Activation Function, Training an Artificial Neural Network, Application of Artificial Neural Network.

UNIT - III : Perceptron and Associative Memories

Amari General Learning Rule, HEBB Learning Rule, ADLINE, Perceptron Layer Network, Associative memory: Auto associative Memory, Bi-directional memory, Back-propagation Network: Architecture, Training Algorithm Application of Back-propagation algorithm

UNIT - IV : Machine Learning

Regression And Classification, Decision Tree, SPRINT, Gini Index, Entropy, Pruning, C4.5, Active Learning - Feature Selection, Clustering, Models And Methods, Neural Networks, Markov Chain/Processes, Hidden Markov Models (HMM).

UNIT - V : Soft Computing Tools

Introduction to MATLAB, Features, Matrix Operations, Curve Plotting, Toolbox Introduction, Introduction to Simulink.

RECOMMENDED BOOKS

- | | |
|---|---|
| 1. Fuzzy systems and Fuzzy Logic | - Klir and Uuna, PHI Publications. |
| 2. Introduction to Artificial Neural Networks | - S. N. Sivanandam and M. Paulraj, Vikas publication. |
| 3. Neural Network Design | - Hagan & Demuth, Vikas Pub. Comp. |
| 4. Fundamentals of Artificial Neural Networks | -M.A.Hassaoun. |
| 5. Fuzzy sets, uncertainty and information | -George J. Kir, & TA Folger. |

REFERENCE BOOKS

- | | |
|--|-----------------------------------|
| 1. Fuzzy sets, Decision making and Expert system | -HJ Zimmerman, Kluwer, Boston. |
| 2. Fuzzy set theory and its applications | - H. J. Zimmerman, Kluwer, Boston |
| 3. Machine Learning Algorithms | -Giuseppe Bonaccorso |
| 4. Matlab Machine Learning | - Michael Paluszek |

[Signature]
27-4-19

[Signature]
27/04/19

[Signature]
27 04 19

[Signature]
27-04-19

[Signature]
27/4/19

[Signature]
27/4/19

[Signature]
Kris

SECOND SEMESTER : M.Sc.(CS)

Paper V : Elective 3. Artificial Intelligence and Expert System

Max Marks : 100

Min Marks : 40

UNIT – I

Introduction to AI: Foundations of AI, Philosophy and History; AI problems, AI technique; The Turing Test. **Intelligent Agents:** Agents and Environments, the Concept of Rationality, the Nature of Environments and the Structure of Agents. **Problem solving & State Space Search:** General problem solving: defining problems as State Space Search, Problem Characteristics; Production Systems & their characteristics.

UNIT – II

Exhaustive Searches: Generate and Test, Breadth First Search, Depth First Search and DFID. **Heuristic Search Techniques:** Branch and Bound technique; Best first search; A* algorithm; Problem Reduction AND/OR Graphs and AO* algorithm. **Local Searches & Optimizations:** Hill climbing and its variants. **Constraint Satisfaction Problems:** Definition; Constraint Propagation and Backtracking. **Game Playing:** Mini-Max Search Procedure; Alpha-Beta Cutoffs; Additional Refinements.

UNIT – III

Knowledge Representation: Types of Knowledge; Knowledge Representation Issues; **Logic:** First order Predicate Logic; Representation of facts in FOL; Inference in FOL; Resolution Principle, Clausal Form and Unification; **Inference Mechanisms:** Forward and Backward Chaining; **Slot and Filler Structures:** Semantic Networks; Frame Systems and value inheritance; Conceptual Dependency; Scripts;

UNIT – IV

Reasoning under Uncertainty: Non-monotonic Reasoning, Probabilistic Reasoning and Uncertainty; Probability Theory; Bayes Theorem and Bayesian networks; Certainty Factor; Dempster-Shafer Theory. **Planning:** Overview; The Blocks World; Component of a Planning System: Goal Stack Planning; Nonlinear Planning; **Natural Language Processing:** Introduction, Overview of Linguistics, Grammars and Languages: context sensitive and context free grammar; Chomsky Hierarchy, Parsing techniques: Recursive Transition Nets, Augmented Transition Nets, Semantic Analysis: Case, Logic and Semantic grammars;

UNIT – V

Expert Systems: Introduction, Characteristics, History and Applications of expert systems; Expert System Shells; Rule Based Systems Architectures, Non Production System Architectures; Knowledge Acquisition and Validation; Case Studies: MYCIN & DENDRAL. **Learning:** Rote learning; Learning by Taking Advise; Induction; Explanation based learning; Discovery; Analogy.

BOOKS RECOMMENDED:

- **Artificial Intelligence**, Rich E., Knight K. and Nair S. B., McGraw Hill Education
- **Artificial Intelligence: A Modern Approach**, Russell S. J. and Norvig P., Pearson Education
- **Introduction to Artificial Intelligence and Expert Systems**, Patterson D. W., PHI
- **Principles Of Artificial Intelligence**, Nilson N. J., Narosa Publications
- **Artificial Intelligence**, Winston P. H., Pearson Education

[Signature]
27-4-19

[Signature]
27/04/19

[Signature]
27 04 2019

[Signature]
27-04-19

[Signature]
27/4/19

[Signature]
27/4/19

[Signature]

SECOND SEMESTER : M.Sc.(CS)

Paper V : Elective 4. Advanced Computer System Architecture

Max Marks : 100

Min Marks : 40

UNIT I

Introduction:- Feng's and Flynn's classification schemes, multiprocessor and multicomputer, UMA, NUMA, COMA, NORMA, memory models, parallel computers and its type. Application of Parallel Computers.

UNIT II

System Interconnect Architecture-Static & dynamic, Hypercube interconnection network, multistage interconnection networks-architecture & routing, design consideration, throughput, delay, blocking and non-blocking properties. Performance Metrics and Benchmarks.

UNIT III

Principle of Pipelining-overlapped parallelism, Linear and non-Linear pipelining, reservation table, calculation of MAL. Types of instruction pipeline. Arithmetic pipeline designs example-Floating point adder, pipelined multiplier.

UNIT IV

Advance processor Technology-RISC, CISC, VLIW architectures. Hazard detection and resolution, functional organization of instruction in IBM 360/91.

UNIT V

Exploring parallelism in program- multidimensional arrays, Parallel Algorithm- Matrix addition, subtraction, multiplication-block and SIMD. Bitonic sort, sorting on linear array processors. Bernstein's condition, Iso efficiency Concept.

RECOMMENDED BOOKS

1. Computer Architecture & Parallel Processing by Kai Hwang and F.A. Briggs-Mc Graw Hill.
2. Advanced Computer Architecture By Kai Hwang -Mc Graw Hill.
3. Parallel Computer Architecture & Programming by- V Raja Raman and C. Shiarammuty-PHI

REFERENCE BOOKS

1. Parallel Computing Theory and practice by Michael J. Quinn -Tata Mc-Graw Hill

Datta
27-4-19

Jay
27/04/19

Shree
27-04-19

Aditya
27-04-19

Pranav
27/4/19

Gaur
27/4/19

Kiran