J. S. University, Shikohabad

B.tech

5th Semester& 6thSemester

(Computer Science & Engineering)

Scheme
&
Syllabus

[Effective from the session 2015-16]

STUDY AND EVALUATION SCHEME FOR
FOUR YEAR B.TECH COURSE IN
COMPUTER SCIENCE & ENGG.

SEMESTER - FIFTH

S.No.	Subject Code	Name of Subject	Periods Per Week				Evaluation Scheme			Duration
			L	T	P	D	Sessional	End Exam	Total	
					THEORY SUBJECT					
1	BTCS-51	Design and Analysis of algorithm	4	1	-	-	50	100	150	3
2	BTCS-52	Database Management System	4	1	-	-	50	100	150	3
3	BTCS-53	Principle of Programming Language	4	1	-	-	50	100	150	3
4	BTCS-54	Web Technology	4	1	-	-	50	100	150	3
5	BTCS-55	Computer Architecture	3	1	-	-	25	50	75	2
6	BTMB-51	Engineering Economics	4	1	-	-	25	50	75	2
		PRACTICA/DRAWING SUBJECTS								
7	BTCS-51P	Design and Analysis of algorithm Lab	-	-	4	-	20	30	50	3
8	BTCS-52P	Database Management System Lab	-	-	4	-	20	30	50	3
9	BTCS-53P	Principle of Programming Language Lab	-	-	4	-	20	30	50	
10	BTCS-54P	Web Technology Lab	-	-	4	-	20	30	50	3
11	BTGD-50	GP							50	
								Grand Total	1000	

NOTE:- (1) Each period will be 50 minutes duration.

      (2) Each session will be of 16 weeks.

      (3) Effective teaching will be at least 14 weeks.

      (4) Remaining periods will be utilised for revision etc.

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STUDY AND EVALUATION SCHEME FOR
FOUR YEAR B.TECH COURSE IN
COMPUTER SCIENCE & ENGG.

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S.No.	Subject Code	Name of Subject	Periods Per Week				Evaluation Scheme			
			L	T	P	D	Sessional	End Exam	Total	Duration
THEORY SUBJECT										
1	BTCS-61	Computer Network	4	1	-	-	50	100	150	3
2	BTCS-62	Software Engineering	4	1	-	-	50	100	150	3
3	BTCS-63	Compiler Design	4	1	-	-	50	100	150	3
4	BTCS-64	Concurrent System					50	100	150	3
5	BTCS-65	E-Commerce					25	50	75	2.5
6	BTMB-61	Industrial Management	4	1	-	-	25	50	75	2.5

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PRACTICA/DRAWING SUBJECTS

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S.No.	Subject Code	Name of Subject	L	T	P	D	Sessional	End Exam	Total	Duration
7	BTCS-61P	Computer Network Lab	-	-	4	-	20	30	50	3
8	BTCS-62P	Software engineering Lab	-	-	4	-	20	30	50	3
9	BTCS-63P	Compiler Design Lab	-	-	4	-	20	30	50	3
10	BTCS-64P	Seminar	-	-	4	-	50		70	3
11	BTGD-60	GP							50	
								Grand Total	1000	

SEMESTER - SIX

NOTE:- (1) Each period will be 50 minutes duration.

      (2) Each session will be of 16 weeks.

      (3) Effective teaching will be at least 14 weeks.

      (4) Remaining periods will be utilised for revision etc.

Design and Analysis of Algorithms

Unit 1 :
Introduction : Algorithms, Analyzingalgorithms, Complexityof algorithms, Growth
of functions, Performance measurements, Sorting and order Statistics - Shell sort,
Quick sort, Merge sort, Heap sort, Comparison of sorting algorithms, Sorting in linear time

Unit 2 :
Advanced Data Structures:Red-Black trees, B–trees, Binomial Heaps, Fibonacci Heaps

Unit 3:
Divide and Conquer with examples such as Sorting, Matrix Multiplication, Convexhull and Searching.Greedy methods
with examples such as Optimal Reliability Allocation, Knapsack,
Minimum Spanning trees – Prim's and Kruskal's algorithms, Single source shortest
paths - Dijkstra's and Bellman Ford algorithms.

Unit 4:
Dynamic programmingwith examples such as Knapsack.All pair shortest paths – Warshal's and Floyd's algorithms,
Resource allocationproblem.Backtracking, Branch and Bound with examples such as Travelling Salesman Problem,
Graph Coloring, n-Queen Problem, Hamiltonian Cyclesand Sum of subsets.

Unit 5:
Selected Topics: Algebraic Computation, Fast Fourier Transform, String Matching,
Theory of NP-completeness, Approximation algorithms and Randomized algorithms

Text books:
1. Thomas H. Coreman, Charles E. Leiserson and Ronald L. Rivest, "Introduction to Algorithms",
Printice Hall of India.
2. E. Horowitz & S Sahni, "Fundamentals of Computer Algorithms",
3. Aho, Hopcraft, Ullman, "The Design and
Analysis of Computer Algorithms" Pearson
Education, 2008.
References:
1. Jon Kleinberg and Éva Tardos, Algorithm Design, Pearson, 2005.
2. Michael T Goodrich and Roberto Tamassia, Algorithm Design: Foundations, Analysis, and
Internet Examples, Second Edition, Wiley, 2006.
3. Harry R. Lewis and Larry Denenberg, Data Structures and Their Algorithms, Harper Collins, 1997
4. Robert Sedgewick and Kevin Wayne, Algorithms, fourth edition, Addison Wesley, 2011.
5. Harsh Bhasin,"Algorithm Design and Analysis",First Edition,Oxford University Press.
6. Gilles Brassard and Paul Bratley,Algorit
hmics:Theory and Practice,Prentice Hall,1995.

Database Management System

Unit 1:

Introduction: An overview of database management system, database system Vs file
system, Database system concept and architecture, data model schema and instances, dataindependence and database
language and interfaces, data definitions language, DML, OverallDatabase Structure.Data Modeling using the Entity
Relationship Model: ER model concepts, notation for ER diagram, mapping constraints, keys, Concepts of Super Key,
candidate key, primary key,Generalization, aggregation, reduction of an ER diagrams to tables, extended ER
model,relationship of higher degree.
Unit 2:
Relational data Model and Language: Relational data model concepts, integrity
constraints, entity integrity, referential integrity, Keys constraints,Domain constraints,
relational algebra, relational calculus, tuple and domain calculus.Introduction on SQL:

Characteristics of SQL, advantage of SQL. SQl data type and literals.Types of SQL commands. SQL operators and their procedure. Tables, views and indexes.Queries and sub queries. Aggregate functions. Insert, update and delete operations, Joins,Unions, Intersection, Minus, Cursors, Triggers, Procedures in SQL/PL SQL

Unit 3:

Data Base Design & Normalization: Functional dependencies, normal forms, first, second,
third normal forms, BCNF, inclusion dependence, loss less join decompositions,normalization using FD, MVD, and JDs, alternative approaches to database design.

Unit 4:

Transaction Processing Concept: Transaction system, Testingof serializability,serializability of schedules, conflict & view serializable schedule, recoverability, Recovery from transaction failures, log based recovery, checkpoints, deadlock handling.Distributed Database: distributed data storage, concurrency control, directory system.V. Concurrency Control Techniques: Concurrencycontrol, LockingTechniques for concurrency control, Time stamping protocols for concurrency control, validation based protocol, multiple granularity, Multi version schemes, Recovery with concurrent transaction,
case study of Oracle.

Text books:

1.Korth, Silbertz, Sudarshan,” Database Concepts”, McGraw Hill 2.Date C J, “ An Introduction to Database Systems”, Addision Wesley

3. Elmasri, Navathe, “ Fudamentals of Database Systems”, Addision Wesley

4. O'Neil, Databases, Elsevier Pub.

References:

1.Leon & Leon,”Database Management Systems”, Vikas Publishing House

2.Bipin C. Desai, “ An Introduction to Database Systems”, Gagotia Publications

3.Majumdar & Bhattacharya, “Database Management System”, TMH

Principle of Programming Language

Unit 1:

The Role of Programming Languages: Why Study Programming Languages,
Towards Higher-Level languages, Programming paradigms, Programming
environmentsLanguage Description: Syntactic structure, language Translation Issues: Programming language Syntax, Stages in translation, Formal translation Models

Unit 2:

Language Properties Modeling Language Properties, Elementary Data Types, Encapsulation, Inheritance,Sequence Control, Subprogram Control

Unit 3:

Programming Paradigms Imperative Programming: Statements, Types, Procedure Activations Object-Oriented Programming: Grouping Of Data and Operations, object oriented programmingFunctional Programming: Elements, Programming in a Typed language, Programmingwith lists

Unit 4 :

Other Programming Paradigms Logic Programming, Concurrent Programming, Network Programming ,
LanguageDescription: Semantic Methods

Unit 5:

Lambda Calculus :Introduction to Lambda Calculus, Simple types, Subtyping

Text books:

1. “Programming Languages: Design and Implementations” , Terrance W.Pratt, Marvin V.
Zelkowitz, T.V.Gopal,Fourth ed.,Prentice Hall

2. “Programming Language Design Concept”, David A. Watt, Willey India

3. “Programming languages: Concepts and Constucts”, Ravi Sethi, Second Ed.,Pearson.

4. “Types and programming Languages”, Benjamin C. Pierce. The MIT Press Cambridge,
Massachusetts London, England

References:

1. Concepts of Programming Languages, Robert W. Sebesta, 10thEd.,Pearson

Web Technology

Unit 1:
Introduction and Web Development Strategies, History of Web and Internet,Protocols governing Web, Writing Web Projects, Connecting to Internet,Introduction to Internet services and tools, Introduction to client-servercomputing.Core Java: Introduction, Operator, Data type, Variable, Arrays, Methods &Classes, Inheritance, Package and Interface, Exception Handling, Multithreadprogramming, I/O, Java Applet, String handling, Event handling, Introduction toAWT, AWT controls, Layout managers.

Unit 2:
Web Page Designing:HTML: list, table, images, frames, forms, CSS, Document type definition, XML:DTD, XML schemes, Object Models, presenting and using XML, Using XML
Processors: DOM and SAX, Dynamic HTML.

Unit 3:
Scripting:Java script: Introduction, documents, forms, statements, functions, objects;
introduction to AJAX, VB Script, Introduction to Java Beans, Advantage,Properties, BDK, Introduction to EJB, Java Beans API.

Unit 4:
Server Site Programming:Introduction to active server pages (ASP), Introduction to Java Server Page (JSP), JSP Application Design, JSP objects, Conditional Processing, Declaring
variables and methods, Sharing data between JSP pages, Sharing Session and Application Data, Database Programming using JDBC, development of java beans in JSP, Introduction to Servelets,Lifecycle, JSDK, Servlet API, Servlet Packages, Introduction to COM/DCOM/CORBA.

Unit 5 :
PHP (Hypertext Preprocessor):Introduction, syntax, variables, strings, operators, if-else, loop, switch, array, function, form, mail, file upload, session, error, exception, filter, PHP-ODBC,

Text books:
1.Burdman, Jessica, "Collaborative Web Development" Addison Wesley
2.Xavier, C, " Web Technology and Design" , New Age International
3.Ivan Bayross," HTML, DHTML, Java Script, Perl & CGI", BPB Publication
4.Bhave, "Programming with Java", Pearson Education
5.Herbert Schieldt, "The Complete Reference:Java",TMH. 6. Hans Bergsten, "Java Server Pages",SPD O'Reilly
6.Ullman, "PHP for the Web: Visual QuickStart Guide", Pearson Education
7.Margaret Levine Young, "The Complete Reference Internet", TMH
8.Naughton, Schildt, "The Comp
lete Reference JAVA2", TMH
9.Balagurusamy E, "Programming in JAVA", TMH

References:
1.Ramesh Bangia, "Internet and Web Design" , New Age International
2.Ivan Bayross," HTML, DHTML, Java Script, Perl & CGI", BPB Publication

Computer Architecture

Unit 1:
Introduction: Digital computer generation, computer types and classifications,
functional units and their interconnections, buses, bus architecture, types of buses and
bus arbitration. Register, bus and memory transfer.Central Processing Unit: Addition and subtraction of signed numbers, look ahead carry adders. Multiplication: Signed operand multiplication, Booths algorithm and array multiplier. Division and logic operations. Floating point arithmetic operation Processor organization, general register organization, stack organization and addressing modes.

Unit 2:
Control Unit: Instruction types, formats, instruction cycles and subcycles (fetch and execute etc) , micro-operations, execution of a complete instruction. Hardwire and microprogrammed control: microprogramme sequencing, wide branch addressing,
microinstruction with next address field, pre-fetching microinstructions, concept of
horizontal and vertical microprogramming.

Unit 3 :
Memory: Basic concept and hierarchy, semiconductor RAM memories, 2D & 2 1/2D
memory organization. ROM memories. Cache memories: concept and design issues 9
performance, address mapping and replacement) Auxiliary memories: magnetic disk,
magnetic tape and optical disks Virtual memory: concept implementation.

Unit 4 :
Input / Output: Peripheral devices, I/O interface,I/O ports, Interrupts: interrupt
hardware, types of interrupts and exceptions. Modes of Data Transfer: Programmed
I/O, interrupt initiated I/O and Direct Memory Access., I/O channels and processors.
Serial Communication: Synchronous & asynchronous communication, standard
communication interfaces.

TEXT BOOK:
1. Carl Hamacher, Zvonko Vranesic and Safwat Zaky, "Computer Organization", Fifth Edition, Tata
McGraw Hill, 2002.
2. William Stallings, "Computer Organization and Architecture – Designing for Performance", Sixth
Edition, Pearson Education, 2003.

REFRENCE BOOKS:-
1. Patterson, Computer Organisation and Design, Elsevier Pub. 2009
2. Vravice,Hamacher & Zaky, "Computer Organization", TMH
3. Mano," Computer System Architecture", PHI
4. John P Hays, " Computer Organization", McGraw Hill
5. Tannenbaum," Structured Computer Organization', PHI 6. P Pal chaudhry, ' Computer Organization & Design',
PHI

[BTMB-51]   Engineering Economics

Unit-1 Introduction to Engineering Economics and Managerial Economics Concept of Efficiency, Theory of Demand ,
Elasticity of Demand, Supply and Law of Supply indifference Curves, Budget Line, Welfare Analysis, Scope of
Managerial Economics, Techniques and Applications of Managerial Economics.

Unit-2 Market Structure Perfect Competitions Imperfect- Monopolistic, Oligopoly, duopoly sorbent features of price
determination and various market conditions.

Unit-3 Demand Forecasting and cost Estimation Characteristics of Forecasts, Forecasting Horizons, Steps to
Forecasting, Forecasting Methods, Seasonal Adjustments, Forecasting Performance Measures, Cost Estimation,
Elements of cost, Computation of Material Variances Break-Even Analysis.

Unit-4 Management Aspects Functions of Management, Project Management, Value Engineering, Project Evaluation,
Decision Making.

Design and analysis of algorithms Lab
Objective :-
1. Program for Recursive Binary & Linear Search.
2. Program for Heap Sort.
3. Program for Merge Sort.
4. Program for Selection Sort.
5. Program for Insertion Sort.
6. Program for Quick Sort.
7.Study of NP-Complete theory.
8.Study of Cook's theorem.
9.Study of Sorting network.

DBMS Lab

Objectives:-
1. Installing oracle.
2. Creating Entity-Relationship Diagram using case tools.
3. Writing SQL statements Using ORACLE
/MYSQL: a)Writing basic SQL SELECT
statements. b)Restricting and sorting data.
c)Displaying data from multiple
tables. d)Aggregating data using
group function. e)Manipulating data.
e)Creating and managing tables.
4. Normalization in ORACLE.
5. Creating cursor in oracle.
6. Creating procedure and functions in oracle.
7. Creating packages and triggers in oracle.

Principles of programming languages

1. Define a LISP function to compute sum of squares.
2. Define a LISP function to compute difference of squares. (if x > y return x
2
-y
2
, otherwise y
2
- x
2
)
3. Define a Recursive LISP function to solve Ackermann's Function.
4. Define a Recursive LISP function to compute factorial of a given number.
5. Define a Recursive LISP function which takes one
argument as a list and returns last element of
the list. (do not use last predicate)
6. Define a Recursive LISP function which takes one
argument as a list and returns a list except last
element of the list. (do not use but last predicate)
7. Define a Recursive LISP function which takes one argument as a list and returns reverse of the
list. (do not use reverse predicate)
8. Define a Recursive LISP function which takes two arguments first, an atom, second, a list, returns a
list after removing first occurrence of that atom within the list.

Web Technology Lab

Objectives:-
1. Write HTML/Java scripts to display your CV in navigator, your Institute website, Department
Website and Tutorial website for specific subject
2. Design HTML form for keeping student record and validate it using Java script.
3. Write an HTML program to design an entry form of student details and send it to store at
database server like SQL, Oracle or MS Access.
4. Write programs using Java script for Web Page to display browsers information.
5. Write a Java applet to display the Application Program screen i.e. calculator and other.
6. Writing program in XML for creation of DTD, which specifies set of rules. Create a style sheet in
CSS/ XSL & display the document in internet explorer.
7. Using ASP for server side programming, ASP for user name and password and to retrieve &

match the value. It display success and failure messages. ASP for creating text file local drive,
ASP for keeping the student record in database.
8. Program to illustrate JDBC connectivity. Program for maintaining database by sending queries.
Design and implement a simple servlet book query with the help of JDBC & SQL. Create MS
Access Database, Create on ODBC link, Compile & execute JAVA JDVC Socket.
9. Design and implement a simple shopping cart example with session tracking API.

Computer Networks

Unit 1 :
Introduction on Concepts: Goals andApplications ofNetwork, Networkstructure and architecture, The OSI reference
model, services, Network Topology Design – Delay Analysis, Back Bone Design, Local Access Network Design,
Physical Layer Transmission
Media, Switching methods, ISDN, Terminal Handling.
Unit 2:
Medium Access sublayer: Medium Access sublayer –Channel All locations, LAN protocols - ALOHA protocols -
Overview of IEEE standards - FDDI. Data Link Layer -Elementary Data Link Protocols, Sliding Window protocols,
Error Handling.

Unit 3:
Network Layer: Network Layer - Point - to Pont Networks, routing, Congestion control
Internetworking -TCP / IP, IP packet, IP address, IPv6.
Unit 4 :
Transport Layer: Transport Layer - Design issues, connection management, session Layer-Design issues, remote
procedure call. Presentation Layer-Design issues, Data compression techniques, cryptography - TCP - Window
Management.
Unit 5 :
Application Layer: Application Layer: File Transfer, Access and Management, Electronic
mail, Virtual Terminals, Other application.Example Networks - Internet and Public Networks.

TEXTBOOKS:
1. Forouzen, "Data Communication and Networking", TMH
2. A.S. Tanenbaum, Computer Networks, Pearson Education
3. W. Stallings, Data and Computer Communication, Macmillan Press
REFRENCES:
1. Anuranjan Misra, "Computer Networks", Acme Learning
2. G. Shanmugarathinam, "Essential of TCP/ IP", Firewall Media

Software Engineering
Unit 1:
Introduction:Introduction to Software Engineering, Software Components,
Software Characteristics, Software Crisis, Software Engineering Processes,Similarity and Differences from
Conventional Engineering Processes,Software Quality Attributes. Software Development Life Cycle (SDLC) Models:
Water Fall Model, Prototype Model, Spiral Model, Evolutionary Development Models, Iterative Enhancement
Models.
Unit 2 :
Software Requirement Specifications (SRS) Requirement Engineering Process: Elicitation, Analysis,
Documentation,Review and Management of User Needs, Feasibility Study, InformationModeling, Data Flow
Diagrams, Entity Relationship Diagrams, DecisionTables, SRS Document, IEEE Standards for SRS.Software Quality
Assurance (SQA): Verification and Validation, SQA Plans, Software Quality Frameworks, ISO 9000 Models, SEI-
CMM Model.

Unit 3 :
Software Design:Basic Concept of Software Design, Architectural Design,Low Level Design: Modularization,Design Structure Charts, PseudoCodes, Flow Charts, Coupling and Cohes ion Measures, Design Strategies:Function Oriented Design, Object
Oriented Design, Top-Down and Bottom-Up Design. Software Measurement and Metrics: Various Size Oriented Measures: Halestead's Software Science, Function Point (FP) Based Measures, Cyclomatic Complexity Measures: Control Flow Graphs.

Unit 4 :
Software Testing:Testing Objectives, Unit Testing, Integration Testing,Acceptance Testing, Regression Testing, Testing for Functionality and Testing for Performance, Top-Down and Bottom-Up Testing Strategies:Test Drivers and Test Stubs, Structural Testing
(White Box Testing),Functional Testing (Black Box Testing), Test Data Suit Preparation, Alpha and Beta Testing of Products.Static Testing Strategies: Formal Technical
Reviews (Peer Reviews), Walk Through, Code Inspection, Compliance with Design and Coding Standards.

Unit 5 :
Software Maintenance and Software Project Management,Software as an Evolutionary Entity, Need for Maintenance, Categories of Maintenance: Preventive, Corrective and Perfective Maintenance, Cost of Maintenance, Software Re-Engineering, Reverse Engineering. Software Configuration Management Activities, Change Control Process, Software Version Control, An Overview of CASE Tools. Estimation of Various
Textbooks:
1. R. S. Pressman, Software Engineering: A Practitioners Approach, McGraw Hill.
2. Rajib Mall, Fundamentals of Software Engineering, PHI Publication.
3. K. K. Aggarwal and Yogesh Singh, Software Engineering, New
Age International Publishers.
4. Pankaj Jalote, Software Engineering, Wiley
5.Deepak Jain,"Software Engineering:Principles and Practices",Oxford University Press.

Compiler Design

Unit 1:
Introduction to Compiler, Phases andpasses, Bootstrapping, Finite state machines and regular expressions and their applications tolexical analysis, Optimization of DFA
-Based Pattern Matchers implementation of lexical analyzers, lexical-analyzer generator, LEX-compiler, Formal grammars and their application to syntax analysis,
BNF notation, ambiguity, YACC. The syntactic specification of programming languages: Context free grammars, derivation and parse trees, capabilities of CFG.
Unit 2:
Basic ParsingTechniques: Parsers, Shiftreduce Parsing, operator precedence parsing, top down parsing, predictive parsers Automatic Construction of efficient Parsers: LR parsers, the canonical Collection of LR(0) items, constructing SLR parsing tables,constructing Canonical LR parsing tables, Constructing LALR parsing tables, using ambiguous grammars, an automatic parser generator, implementation of LR parsing tables.
Unit 3:
Syntax-directed Translation: Syntax-directed Translation schemes,Implementation of Syntax-directed Translators, Intermediate code, postfix notation, Parse trees & syntax trees, three address code,quadruple & triples, translation of assignment statements, Boolean
expressions, statements that alter the flow of control, postfix translation, translation with
a top down parser
Unit 4:
Symbol Tables: Data structure for symbols tables, representingscope8information. Run-Time Administration: Implementation of simplestack allocation scheme, storage allocation in block structured language. Error Detection & Recovery: Lexical Phase errors,syntactic phase errors semantic errors.VCode Generation: Design Issues,the Target Language. Addresses
in the Target Code, Basic Blocks and Flow Graphs, Optimization of Basic Blocks, Code Generator.Code optimization: Machine-Independent Optimizations, Loop optimization, DAG representation of basic blocks,.

Textbooks:
1. Aho, Sethi & Ullman, "Compilers: Principles, Techniques and Tools", Pearson Education
2. V Raghvan, " Principles of Compiler Design", TMH
3. Kenneth Louden," Compiler Construction", Cengage Learning.
4. Charles Fischer and Ricard LeBlanc," Crafting a Compiler with C", Pearson Education

Refrences:
1.K. Muneeswaran,Compiler Design,First Edition,Oxford University Press.
2.J.P. Bennet, "Introduction to Compiler Techniques", Second Edition, TataMcGraw-Hill,2003.

Concurrent Systems

Unit 1:
Introduction to concurrent systems and Formal Methods:Reactive systems, Formal methods for reactive systems, Labelled transition systems, Operational semantics for concurrent processes.
Unit 2:
Process Algebras: Operators forprocess modelling, CCS, CSP, Pi-calculus
Unit 3:
Asynchronous Pi Calculus
Unitn 4 :
Distributed Pi Calculus, Introduction to type systems
Unit 5:
Tools and Techniques: Experimental practice on mobility workbench (MBW), concurrency
workbench (CWB-NC), CTMC.
References:
1. Robin Milner: Communicating and mobile systems: The π-Calculus,Cambridge
University Press, 1999
2. Matthew Hennessy: A distributed Pi-Calculus, Cambridge University Press, 20

E-Commerce

Unit 1:
Introduction: Definition of Electronic Commerce, E-Commerce:technology and prospects, incent
ives for engaging in electronic commerce, needs of E-Commerce, advantages and disadvantages,framework, Impact of E-commerce on business, E-Commerce
Models.
Unit 2:
Network Infrastructure for E- Commerce:Internet and Intranet based E-commerce- Issues, problems and prospects, Network Infrastructure, Network Access Equipments,
Broadband telecommunication (ATM, ISDN, FRAME RELAY).Mobile Commerce:Introduction, Wireless Application Protocol,WAP technology, Mobile Information device.
Unit 3:
WebSecurity: Security issues on web, Importance of Firewall, components of Firewall, Transaction security, Emergingclient server,Security Threats, Network Security, Factors to consider in Firewall design, Limitation of Firewalls.
Unit 4:
Encryption: Encryption techniques, Symmetric Encryption: Keys and data encryption standard, Triple encryption, Secret key encryption; Asymmetric encryption: public and private pair key encryption,Digital Signatures, Virtual Private Network.
Unit 5:
Electronic Payments: Overview, The SET protocol, Payment Gateway, certificate, digital Tokens, Smart card, credit card,magnetic strip card, E-Checks, Credit/Debit card based EPS, online
Text Books:
1. Ravi Kalakota, Andrew Winston, "Frontiers of Electronic Commerce", Addison-
Wesley.

2. Pete Lohsin , John Vacca "Electronic Commerce", New Age International 3. Goel, Ritendra "E-commerce", New Age International
4. Laudon, "E-Commerce: Business, Technology, Society", Pearson Education

BTMB-61 : INDUSTRIAL MANAGEMENT

Unit-I Introduction: Concept, Development, application and scope of Industrial Management. Productivity: Definition, measurement, productivity index, types of production system, Industrial Ownership.

Unit-II Management Function: Principle of Management – Time and motion study, work simplification – process charts and flow diagrams, Production Planning.

Unit-III Inventory Control: Inventory, Cost, Deterministic Models, Introduction to supply chain management.

Unit-IV Quality Control: Process control, SQC, Control charts, Single, Double and Sequential Sampling, Introduction to TQM.

Computer Networks Lab

1. Programs using TCP Sockets (like date and time server & client, echo server & client, etc.)
2. Programs using UDP Sockets (like simple DNS)
3. Programs using Raw sockets (like packet capturing and filtering)
4. Programs using RPC
5. Simulation of sliding window protocols

Software Engineering Lab

For any given case/ problem statement do the following;
1. Prepare a SRS document in line with the IEEE recommended standards.
2. Draw the use case diagram and specify the role of each of the actors. Also state the precondition, post condition and function of each use case.
3. Draw the activity diagram.
4. Identify the classes. Classify themas weak and strong classes and draw the class diagram.

5. Draw the sequence diagram for any two scenarios.
6. Draw the collaboration diagram.
7. Draw the state chart diagram.
8. Draw the component diagram.
9. Perform forward engineering in java.(Model to code conversion)
10. Perform reverse engineering in java.(Code to Model conversion)
11. Draw the deployment diagram.

Compiler Design Lab

1. Implementation of LEXICAL ANALYZER for IF STATEMENT
2. Implementation of LEXICAL ANALYZER for ARITHMETIC EXPRESSION
3. Construction of NFA from REGULAR EXPRESSION
4. Construction of DFA from NFA
5. Implementation of SHIFT REDUCE PARSING ALGORITHM
6. Implementation of OPERAT OR PRECEDENCE PARSER
7. Implementation of RECURSIVE DESCENT PARSER
8. Implementation of CODE OPTIMIZATION TECHNIQUES
9. Implementation ofCODE GENERATOR