

Note: Removed Contents are marked in Yellow color and Added Contents are marked in red color

SCSX1011	OPERATING SYSTEMS (Common to CSE&IT)	L	T	P	Credits	Total Marks
		3	1	0	4	100

UNIT I INTRODUCTION

10 hrs.

Introduction – Operating system structures – System components – OS services – System calls – System structure – Resources – Processes – Threads – Objects – Device management – Different approaches – Buffering device drivers.

UNIT II PROCESS MANAGEMENT

10 hrs.

Processes – Process concepts – Process scheduling – Operations on processes – Cooperating processes – CPU scheduling – Basic concepts – Scheduling criteria – Scheduling algorithms – Preemptive strategies – Non-preemptive strategies.

UNIT III SYNCHRONIZATION AND DEADLOCKS

10 hrs.

The critical section problem – Semaphores – Classic problems of synchronization – Critical regions – Monitors – Deadlocks – Deadlock characterization – Prevention – Avoidance – Detection – Recovery.

UNIT IV MEMORY MANAGEMENT

10 hrs.

Storage Management Strategies – Contiguous vs. non-contiguous storage allocation – Fixed & variable partition multiprogramming – Paging – Segmentation – Paging/Segmentation systems – Page replacement strategies – Demand & anticipatory paging – File concept – Access methods – Directory structure – File sharing – Protection – File – system structure – Implementation.

UNIT V LINUX & SHELL PROGRAMMING

10 hrs.

Shell operation commands – Linux file structure – File management operation – Internet service – Telnet-FTP – Filters & regular expressions – Shell programming – Variable, arithmetic operations, control structures, handling date, time & system information.

REFERENCE BOOKS:

1. Abraham Silberschatz, Peter Galvin and Gagne, "Operating System Concepts"th, 6th Edition, Addison Wesley, 2002.
2. Harvey M. Deitel, "Operating System", 2nd Edition, Addison Wesley, 2000.
3. Gary Nutt, "Operating System, A modern perspective", 2nd Edition, Addison Wesley, 2000.
4. Richard Peterson, "Linux : The Complete Reference", 6th Edition, Tata McGraw Hills, 2007.

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks

20 marks

PARTB: 2 Questions from each unit with internal choice, each carrying 16 marks

80 Marks

SCS1301	OPERATING SYSTEM	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 INTRODUCTION

8 Hrs.

Introduction - Operating system structures - System components - OS services - System calls - System structure - Resources Processes - Threads - Objects - Device management - Different approaches - Buffering device drivers.

UNIT 2 PROCESS MANAGEMENT

9 Hrs.

Processes - Process concepts - Process scheduling - Operations on processes - Cooperating processes - CPU scheduling - Basic concepts - Scheduling criteria - Scheduling algorithms - Preemptive strategies - Non-preemptive strategies

UNIT 3 SYNCHRONIZATION AND DEADLOCKS

9Hrs.

The critical section problem - Semaphores - Classic problems of synchronization - Critical regions - Monitors-Dead locks - Deadlock characterization - Prevention - Avoidance - Detection - Recovery.

UNIT 4 MEMORY MANAGEMENT

9 Hrs.

Storage Management Strategies - Contiguous Vs. Non-Contiguous Storage Allocation - Fixed & Variable Partition Multiprogramming - Paging - Segmentation - Paging/Segmentation Systems - Page Replacement Strategies - Demand & Anticipatory Paging - File Concept - Access Methods - Directory Structure - File Sharing - Protection - File - System Structure - Implementation.

UNIT 5 I/O SYSTEMS, LINUX & SHELL PROGRAMMING

10 Hrs.

Mass Storage Structure - Disk Structure- Disk Scheduling - Disk Management - Swap Space Management - RAID Structure - Shell Operation Commands - Linux File Structure - File Management Operation - Internet Service - Telnet - FTP - Filters & Regular Expressions - Shell Programming - Variable, Arithmetic Operations, Control Structures, Handling Date, Time & System Information.

Max. 45 Hours.

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Comprehend knowledge about operating system components and services.
- CO2 : Apply knowledge of process scheduling algorithms for a given context.
- CO3 : Analyze process synchronization and deadlock conditions.
- CO4 : Construct the process of Mapping logical address to physical address.
- CO5 : Design appropriate strategies for Paging, Segmentation.
- CO6 : Develop real time applications Based on Linux shell programming.

TEXT / REFERENCE BOOKS

1. Abraham Silberschatz, Peter Galvin and Gagne, "Operating System Concepts", 6th Edition, Addison Wesley, 2002.
2. Harvey M.Deitel, "Operating System", 2nd Edition, Addison Wesley, 2000.
3. Gary Nutt, "Operating System, A modern perspective", 2nd Edition, Addison Wesley, 2000.
4. Richard Peterson, "Linux : The Complete Reference", 6th Edition, Tata McGraw Hills, 2007.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks: 100

Exam Duration: 3 Hrs.

PART A: 2 Questions from each unit, each carrying 2 marks

20 Marks

PART B: 2 Questions from each unit with internal choice, each carrying 16 marks

80 Marks

SCSX1023	COMPUTER GRAPHICS & MULTIMEDIA SYSTEM (Common to CSE & IT)	SL	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I BASICS OF COMPUTER GRAPHICS

10 hrs.

Output Primitives: Survey of computer graphics – Overview of graphics systems – Line drawing algorithm – Circle drawing algorithm – Curve drawing algorithm - Attributes of output primitives – Anti-aliasing

UNIT II 2D AND 3D CONCEPTS AND TRANSFORMATIONS

10 hrs.

Basic two dimensional transformations – Other transformations – 2D and 3D viewing – Line clipping – Polygon clipping – Logical classification – Input functions – Interactive picture construction techniques – Three dimensional concepts – Three dimensional transformations

UNIT III METHODS AND MODELS

10 hrs.

Visible surface detection methods – Illumination models – Halftone patterns – Dithering techniques – Polygon rendering methods – Ray tracing methods – Color models and color applications

UNIT IV BASICS OF MULTIMEDIA

10 hrs.

Introduction to multimedia – Multimedia skills – Multimedia building blocks – Text, sound, images, audio, animations – Making instant multimedia – Basic software tools – File Formats – JPEG, MPEG

UNIT V MULTIMEDIA TOOLS

10 hrs.

Introduction to Photoshop – Workplace – Tools – Navigating window – Importing and exporting images – Operations on Images – resize, crop, rotate. Introduction to Flash – Elements of flash document – flash environment – Drawing tools – Flash animations – Importing and exporting - Adding sounds – Publishing flash movies – Basic action scripts – GoTo, Play, Stop, Tell Target.

REFERENCE BOOKS:

1. Donald Hearn, Pauline Baker M., "Computer Graphics", 2nd Edition, Prentice Hall, 1994.
2. Tay Vaughan ,"Multimedia", 5th Edition, Tata McGraw Hill, 2001.
3. Ze-Nian Li, Mark S. Drew ,"Fundamentals of Multimedia", Prentice Hall of India, 2004.
4. D. McClelland, L.U.Fuller ,"Photoshop CS2 Bible", Wiley Publishing, 2005.

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A : 2 Questions from each unit, each carrying 2 marks

20 marks

PARTB:2 Questions from each unit with internal choice, each carrying 16 marks

80 Marks

SCS1302	COMPUTER GRAPHICS AND MULTIMEDIA SYSTEMS	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 BASICS OF COMPUTER GRAPHICS

9 Hrs.

Output Primitives: Survey of computer graphics - Overview of graphics systems - Line drawing algorithm - Circle drawing algorithm - Curve drawing algorithm - Attributes of output primitives - Anti-aliasing.

UNIT 2 2D TRANSFORMATIONS AND VIEWING

8Hrs.

Basic two dimensional transformations - Other transformations - 2D and 3D viewing - Line clipping - Polygon clipping - Logical classification - Input functions - Interactive picture construction techniques.

UNIT 3 3D CONCEPTS AND CURVES

10 Hrs.

3D object representation methods - B-REP, sweep representations, Three dimensional transformations. Curve generation - cubic splines, Beziers, blending of curves- other interpolation techniques, Displaying Curves and Surfaces, Shape description requirement, parametric function. Three dimensional concepts – Introduction - Fractals and self-similarity- Successive refinement of curves, Koch curve and peano curves.

UNIT 4 METHODS AND MODELS

8Hrs.

Visible surface detection methods - Illumination models - Halftone patterns - Dithering techniques - Polygon rendering methods - Ray tracing methods - Color models and color applications.

UNIT 5 MULTIMEDIA BASICS AND TOOLS

10 Hrs.

Introduction to multimedia - Compression & Decompression - Data & File Format standards - Digital voice and audio - Video image and animation. Introduction to Photoshop - Workplace - Tools - Navigating window - Importing and exporting images - Operations on Images - resize, crop, and rotate - Introduction to Flash - Elements of flash document - Drawing tools - Flash animations - Importing and exporting - Adding sounds - Publishing flash movies - Basic action scripts - GoTo, Play, Stop, Tell Target.

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to

CO1 : Construct lines and circles for the given input.

CO2 : Apply 2D transformation techniques to transform the shapes to fit them as per the picture definition..

CO3 : Construct splines, curves and perform 3D transformations

CO4 : Apply color and transformation techniques for various applications.

CO5 : Analyze the fundamentals of animation, virtual reality, and underlying technologies

CO6 : Develop photo shop applications. .

TEXT / REFERENCE BOOKS

1. Donald Hearn, Pauline Baker M., "Computer Graphics", 2nd Edition, Prentice Hall, 1994.
2. Tay Vaughan , "Multimedia", 5th Edition, Tata McGraw Hill, 2001.
3. Ze-Nian Li, Mark S. Drew , "Fundamentals of Multimedia", Prentice Hall of India, 2004
4. D. McClelland, L.U.Fuller , "Photoshop CS2 Bible", Wiley Publishing, 2005.
5. Jjames D. Foley, Andries van Dam, Steven K Feiner, John F. Hughes, "Computer Graphics Principles and Practice, 2nd Edition in C, Audison Wesley, ISBN - 981 -235-974-5.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each- No choice

20 Marks

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

80 Marks

SCSX1004	SOFTWARE ENGINEERING (Common to CSE & IT)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I INTRODUCTION

10 hrs.

S/W engineering paradigm –Life cycle models – Water fall – Incremental – Spiral – Evolutionary – Prototyping – Object oriented – System engineering – Computer based system – Verification – Validation – Life cycle process – Development process – System engineering hierarchy – Introduction to CMM – Levels of CMM.

UNIT II SOFTWARE ENGINEERING PROCESS

10 hrs.

Functional And Non-Functional – User – System – Requirement Engineering Process – Feasibility Studies –Requirements – Elicitation – Validation and management – Fundamental of requirement analysis – Analysis principles – Software prototyping – Prototyping in the Software Process – Rapid Prototyping Techniques – User Interface Prototyping – S/W Document Analysis and Modeling – Data – Functional and Behavioral Models – Structured Analysis and Data Dictionary.

UNIT III DESIGN PROCESS AND CONCEPTS

10 hrs.

Modular design – Design heuristic – Design model and document – Architectural design – Software architecture – Data design – Architecture data – Transform and transaction mapping – User interface design – User interface design principles.

UNIT IV BASIC CONCEPTS OF SOFTWARE TESTING

10 hrs.

Levels - Test activities - Types of s/w test - Black box testing - Testing boundary condition - Structural testing - Test coverage criteria based on data flow mechanisms - Regression testing - Testing in the large- S/W testing strategies - Strategic approach and issues - Unit testing - Integration testing - Validation testing - System testing and debugging. Case studies – Writing black box and white box testing.

UNIT V COST ESTIMATION & MAINTENANCE

10 hrs.

Software cost estimation – Function point models – COCOMO model – Quality management – Quality concepts – SQA – Software reviews – Formal technical reviews – Formal approaches of SQA and software reliability – Error tracking – Software maintenance – SCM - Need for SCM - Version control - Introduction to SCM process - Software configuration items. Re-Engineering – Software reengineering – Reverse engineering – Restructuring – Forward engineering.

REFERENCE BOOKS:

1. Pressman, "Software Engineering and Application", 6th Edition, Mcgraw International Edition, 2005.
2. Shooman. M.C , "Software Engineering Design", Mcgraw International Edition, 1985.
3. Richardairley, " SoftwareEngineering-Design, Reliability And Management", Mcgraw International Edition, 1983.
4. Sommerville, "Software Engineering", 6th Edition, Pearson Education, 2000.
5. Pfleeger, "Software Engineering", 6th Edition, Prentice Hall of India, 2005
6. Ghezzi, "Software Engineering", 2^d Edition, Prentice Hall of India, 2005.

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks

20 marks

PARTB:2 Questions from each unit with internal choice, each carrying 16 marks

80 Marks

SCS1305	SOFTWARE ENGINEERING	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 INTRODUCTION

9 Hrs

S/W engineering paradigm - Life cycle models - Water fall - Incremental - Spiral - Evolutionary - Prototyping - Object oriented system engineering - Computer based system - Verification - Validation - Life cycle process - Development process - System engineering hierarchy - Introduction to CMM - Levels of CMM.

UNIT 2 SOFTWARE ENGINEERING PROCESS

9 Hrs.

Functional And Non-Functional - User - System - Requirement Engineering Process - Feasibility Studies - Requirements - Elicitation - Validation and management - Fundamental of requirement analysis - Analysis principles-Software prototyping - Prototyping in the Software Process - Rapid Prototyping Techniques - User Interface Prototyping - Software Document Analysis and Modeling - Data - Functional and Behavioral Models - Structured Analysis and Data Dictionary.

UNIT 3 DESIGN PROCESS AND CONCEPTS

9 Hrs.

Design process - Modular design - Design heuristic - Design model and document - Architectural design - Software architecture - Data design - Architecture data - Transform and transaction mapping - User interface design - User interface design principles.

UNIT 4 BASIC CONCEPTS OF SOFTWARE TESTING

9 Hrs.

Levels - Software Testing Fundamentals - Types of s/w test - White box testing- Basis path testing - Black box testing - Control Structure testing- Regression testing - Testing in the large- S/W testing strategies - Strategic approach and issues - UNIT testing - Integration testing - Validation testing - System testing and debugging. Case studies - Writing black box and white box testing.

UNIT 5 COST ESTIMATION & MAINTENANCE

9 Hrs.

Software cost estimation - COCOMO model - Quality management - Quality concepts- SQA - Software reviews - Formal technical reviews - Formal approaches of SQA and software reliability - Software maintenance - SCM - Need for SCM - Version control - Introduction to SCM process - Software configuration items. Re-Engineering - Software reengineering - Reverse engineering - Restructuring - Forward engineering.

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Select appropriate Software Development Lifecycle Model for a given requirement.
- CO2 : Comprehend various Functional and Non-Functional Requirements.
- CO3 : Create User Interface using Design concepts.
- CO4 : Generate Test cases for the developed Code.
- CO5 : Estimate Cost & Maintenance of the Project..
- CO6 : Generate an overall plan for a specific application

TEXT / REFERENCE BOOKS

1. Pressman, "Software Engineering and Application", 6th Edition, McGraw International Edition, 2005..
2. Shooman. M.C , "Software Engineering Design", McGraw International Edition, 1985.Compiler Principles, Techniques & Tools", Addison-Wesley Publishing Company, 1986
3. Richard Fairley, " Software Engineering - Design, Reliability And Management", McGraw International Edition, 1983.
4. Sommerville, "Software Engineering", 6th Edition, Pearson Education, 2000.
5. Pfleeger, "Software Engineering", 6th Edition, Prentice Hall of India, 2005
6. Ghezzi, "Software Engineering", 2nd Edition, Prentice Hall of India, 2005.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each- No choice

20 Marks

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

80 Marks

SCSX1018	DATABASE SYSTEM (Common to CSE, IT & ECE)	L	T	P	Credits	Total Marks
		3	1	0	4	100

UNIT I BASIC CONCEPTS

10 hrs.

Databases and databases users – Database system concepts and architecture – Data modeling using entity Relationship model – Enhanced entity relationship and object modeling – Record storage and file organizations – Index structures for files.

UNIT II DATABASE MODELS

10 hrs.

Introduction to Network – Hierarchical, Relational and Object Oriented Model – Relational Model – Relation algebra and calculus – Commercial query languages – Security and integrity – Functional dependency – Normalization – Relational database design.

UNIT III ADVANCED CONCEPTS

10 hrs.

Query processing – Crash recovery – Concurrency control – Distributed databases - Database security and authorization – Object oriented databases.

UNIT IV ORACLE DATABASE ADMINISTRATION

10 hrs.

Oracle architecture – Managing Oracle instance – Creation of database - Data dictionary and dynamic performance views.

UNIT V ORACLE DATABASE STRUCTURE AND STORAGE

10 hrs.

Data files and tablespaces – Control files – Redo log files and archived log files – Managing users and privileges – Managing password security and resources.

REFERENCE BOOKS:

1. Elmasri & Navathe, "Fundamentals of Database Systems", 3rd Edition, Addison Wesley, 2000.
2. Abraham Silberschatz, Henry.F.Korth and S.Sudharshan, "Database System Concepts", 4th Edition, 2002.
3. Jan L.Harrington, "Object Oriented Database Design", Harcourt India Pvt Ltd. 2000.(Unit III)
4. Kevin Loney & Marlene Theriault, "Oracle9i DBA Handbook", Tata McGraw-Hill, 2002. (Unit IV and V)
5. Michael Abbey, Michael Corey, Ian Abramson, "Oracle9i A Beginner's Guide", Tata McGraw-Hill, 2002. (Unit IV and V)
6. www.oracle.com (Unit IV and V)

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks

20 marks

PARTB:2 Questions from each unit with internal choice, each carrying 16 marks

80 Marks

SCS1306	DATABASE MANAGEMENT SYSTEM	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 INTRODUCTION TO DATABASES

9 Hrs.

Databases and Databases users - Database system concepts and architecture - Data modeling using Entity Relationship (ER) Model. **Relational Model - The Relational Data Model and Relational Database Constraints** - The Relational Algebra and Relational Calculus.

UNIT 2 DATABASE DESIGN

9 Hrs.

Overview of the QBE Language - Overview of the Hierarchical Data Model - Overview of the Network Data Model - **SQL-99: Schema Definition, Constraints, Queries, and Views- Functional Dependencies and Normalization for Relational Databases.**

UNIT 3 QUERY PROCESSING

9Hrs.

Algorithms for Query Processing and Optimization - Introduction to Transaction Processing Concepts and Theory - Concurrency control techniques.

UNIT 4 RECOVERY AND SECURITY

9Hrs.

Database Recovery Techniques - Database Security - Distributed databases and Client- Server Architecture

UNIT 5 OBJECT DATABASE

9Hrs.

Concepts for Object Database - Enhanced Data Models for Advanced Application Emerging Database Technologies and Application

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Construct ER model for a given application..
- CO2 : Apply normalization on Relational Databases
- CO3 : Demonstrate query optimization and concurrent transaction processing
- CO4 : Analyse recovery techniques, security mechanism, fragmentation and load balancing of databases.
- CO5 : Design database using Object Oriented techniques...
- CO6 : Create database for a specified application

TEXT / REFERENCE BOOKS

1. Elmasri & Navathe - Fundamentals of Database Systems - 3rd Edition, 2nd Reprint, Addison Wesley, 2000
2. Abraham Silberschatz, Henry. F. Korth and S. Sudharshan "Database System Concepts", 4th Edition, 2002.
3. C. J. Date, "Introduction to database systems", Addison Wesley, 7th Edition, 2001.
4. Jan L. Harrington, "Object oriented database design", Harcourt India private limited

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each- No choice

20 Marks

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

80 Marks

SCSX1017	DATA COMMUNICATION & COMPUTER NETWORKS (Common to CSE, IT & EEE)	L	T	P	Credits	Total Marks
		3	1	0	4	100

UNIT I PROTOCOLS & MEDIA

10 hrs.

Introduction to data communication – Network protocols & standards – Line configuration – Topology – Transmission mode – Categories of networks – OSI model – Layers of OSI model – Transmission media – Guided media – Unguided media.

UNIT II SIGNALS & ERRORS

10 hrs.

Analog and digital signals – Encoding and modulation – Parallel and serial transmission – DTE/DCE – Types of errors – Error detection and correction – Data link control – Line discipline – Flow control – Error control.

UNIT III MULTIPLEXING & SWITCHING

10 hrs.

Multiplexing – Types of multiplexing – LAN – Project 802 – Ethernet – Token bus – Token ring – FDDI – MAN – IEEE 802.6 – Circuit switching – Packet switching.

UNIT IV ISDN & ATM

10 hrs.

History of analog and digital network – Access to ISDN – ISDN layers – Broadband ISDN – Packet layer protocol – ATM – ATM architecture – ATM layers – Congestion control – Leaky bucket algorithm.

UNIT V NETWORK & APPLICATION LAYER

10 hrs.

Repeaters – Bridges – Routers – Gateway – Routing algorithms – TCP/IP – Overview – Network layer – Transport and application layers of TCP/IP – DNS – SMTP – HTTP – WWW.

REFERENCE BOOKS:

1. Behrouz and Forouzan, "Data Communications and Networking", 2nd Edition, Tata McGraw Hill, 2007.
2. Andrew.S.Tenenbaum, "Computer Networks", 4th Edition, Prentice Hall of India, 2008.
3. William Stallings, "Data and Computer Communication", 6th Edition, Pearson Education, 2000.

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks

20 marks

PARTB:2 Questions from each unit with internal choice, each carrying 16 marks

80 Marks

SCS1314	DATA COMMUNICATION AND COMPUTER NETWORKS			L	T	P	Credits	Total Marks
					3	0	0	3

UNIT 1 DATA COMMUNICATION

9 Hrs.

Introduction to data communication - Network protocols & standards - Line configuration - Topology - Transmission mode - Categories of networks - OSI model - Layers of OSI model - TCP/IP Model - Transmission media- Guided media - Unguided media.

UNIT 2 DATALINK LAYER

9 Hrs.

Link layer services - Framing - Flow Control - Error control- **Medium Access Control - Ethernet CSMA/CD - Token Ring - FDDI - Token Passing- Wireless LAN - CSMA/CA**

UNIT 3 NETWORK LAYER

9 Hrs

Circuit Switching - Packet Switching - Routing - **Distance Vector Routing - Link State Routing - Addressing- Subnetting - IPV4- IPV6- ARP - RARP - ICMP - IGMP - DHCP.**

UNIT 4 TRANSPORT LAYER

9 Hrs.

TCP- UDP - Connection Management- Flow Control - Retransmission - Congestion Control - Detection and Avoidance.

UNIT 5 APPLICATION LAYER

9 Hrs.

Networking Devices - Repeaters - Switches - Bridges - Routers - Gateways- Domain Name System - **FTP - WWW and HTTP - SNMP - SMTP - POP3 - IMAP - MIME.**

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to:

- CO1: Understand and explain the concept of Data Communication and networks, layered architecture and their applications.
- CO2: Evaluate data communication link considering elementary concepts of data link layer protocols for error detection and correction.
- CO3: Apply various network layer techniques for designing subnets and supernets and analyse packet flow on basis of routing protocols.
- CO4: Analyze and Set up protocol designing issues for Communication networks.
- CO5: Estimate the congestion control mechanism to improve quality of service of networking application
- CO6: Understand and design application layer protocols and internet applications such as network security, Email and DNS,

TEXT / REFERENCE BOOKS

1. Behrouz A. Fourouzan, "Data Communication and Networking", McGraw-Hill Education India Pvt. Ltd - New Delhi.
2. William Stallings, Data and Computer Communications (8th ed.), Pearson Education, 2007.
3. P.C. Gupta, Data Communications and Computer Networks, Prentice-Hall of India, 2006.
4. Andrew S. Tanenbaum, "Computer Networks", Fourth Edition, Pearson.
5. L. L. Peterson and B. S. Davie, Computer Networks: A Systems Approach (3rd ed.), Morgan Kaufmann, 2003.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each- No choice

20 Marks

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

80 Marks

SCSX4013	OPERATING SYSTEMS LAB	L	T	P	Credits	Total Marks
		0	0	4	2	100

List of Experiments

1. Study of basic LINUX & Vi Editor command
2. Searching a SubString in given text
3. Menu Based Math Calculator
4. Printing pattern using loop statement
5. Converting File names from Uppercase to Lowercase
6. Manipulate Date/Time/Calendar
7. Showing various system information
8. Implementation of process scheduling mechanism – FCFS, SJF, Priority Queue.
9. Reader – Writer Problem.
10. Dinner’s Philosopher Problem.
11. First Fit, Worst Fit, Best Fit allocation strategy.
12. Bankers Algorithm
13. Implement the producer consumer problem using Semaphore
14. Implement some memory management Scheme

SCS4301	OPERATING SYSTEM LAB	L	T	P	Credits	Total Marks
		3	0	0	3	100

1. Study of basic LINUX & vi Editor command
2. String and Numerical Handling Functions
3. Loop and Selection Constructs
4. File Handling Functions
5. Manipulate Date/Time/Calendar
6. Retrieve System information
7. Implementation of process scheduling mechanism – FCFS, SJF, Priority Queue.
8. Reader – Writer Problem.
9. Diner’s Philosopher Problem.
10. First Fit, Worst Fit, Best Fit allocation strategy.
11. Bankers Algorithm
12. Implement the producer consumer problem using Semaphore
13. Implement memory management Scheme

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Apply Linux Shell program for networking problems.
- CO2 : Analyze different types of scheduling algorithms for concurrent processes.
- CO3 : Formulate critical section problems for process synchronization.
- CO4 : Investigate cause and effect related to process deadlock.
- CO5 : Decide appropriate memory allocation strategy.
- CO6 : Create a real time application based on operating system concepts.

SCSX4011	RDBMS LAB	L	T	P	Credits	Total Marks
		0	0	4	2	100

List of Experiments

1. Data Definition Language (DDL) commands in RDBMS.
2. Data Manipulation Language (DML) and Data Control Language (DCL) commands in RDBMS.
3. Constraints and Oracle built-in Functions
4. Joins and Group-by Commands
5. Design and implementation of Payroll Processing System.
6. Design and implementation of Banking System.
7. Design and implementation of Student Information System.
8. Design and implementation of Quiz Application

SCS4302	RDBMS LAB	L	T	P	Credits	Total Marks
		0	0	4	2	100

SUGGESTED LIST OF EXPERIMENTS

1. Data Definition Language (DDL)
2. Data Manipulation Language (DML)
3. Data Control Language (DCL)
4. Constraints and built-in Functions
5. Joins and Group-by Commands
6. PL/SQL Program using functions
7. PL/SQL Program to create Triggers
8. Consider any application and design using.
 - a. Normalization
 - b. Data Flow Diagram
 - c. Entity-Relation Diagram
 - d. Data Dictionary
 - e. Table Structure

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Comprehend the underlying concepts of relational database management system
- CO2 : Analyze various DDL/DML/DQL/DCL commands in SQL.
- CO3 : Implement integrity constraints on a database using a state-of-the-art DBMS
- CO4 : Design a normalized database using normalization techniques
- CO5 : Create PL/SQL programs including stored Procedures, stored functions, cursors, triggers.
- CO6 : Design a schema for any given real world problem