M.D. UNIVERSITY, ROHTAK

Scheme of Studies & Examination
Bachelor of technology(Information Technology)
Semester - V
'F' Scheme Effective from 2010-11

S No	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam (Hours)
			L	T	P	Total	Marks of Class work	Theory	Practical	Total	
1	IT-301-F	Rapid Application Development	3	1		4	50	100	-	150	3
2	IT-303-F	System Programming & System Administration (Common with CSE – VIth Sem)	3	1	-	4	50	100	-	150	3
3	IT-305-F	Computer Networks (IT, AEI, Common with CSE & EL– VIth Sem)	3	1	-	4	50	100	-	150	3
4	CSE-301-F	Principles of Operating System (CSE,IT)	3	1	-	4	50	100	-	150	3
5	EE- 309-F	Microprocessor & Interfacing (EL,CSE,IT,EI, IC, EEE, AEI)	3	1	-	4	50	100	-	150	3
6	CSE-303-F	Computer Graphics (CSE,IT)	3	1	-	4	50	100	-	150	3
7	IT-307-F	Rapid Application Development Lab	-	-	2	2	25	-	25	50	3
8	CSE-309-F	Computer Graphics Lab (CSE,IT)	-	-	3	3	50	-	50	100	3
9	CSE-313-F	Operating Systems Lab. (CSE, IT Common with CSE – V Sem)	-	-	2	2	25	-	25	50	3
10	EE-329- F	Microprocessor & Interfacing Lab. (CSE, IT, EL, EI, IC, AEI, EEE)	-	-	2	2	25	-	25	50	3
11	IT-309-F	Practical Training-I	-	-	2	2	-	-	-	-	-
		TOTAL	**18**	**6**	**11**	**35**	**425**	**600**	**125**	**1150**	

Note:

1) Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

2) The marks of class work as well as practical examination in the subject CSE-309 E (Computer Graphics Lab.) has been increased from 25 each to 50 each. Thus the total marks for the subjects shall be 100 in place of 50 from the session 2007-08.

IT-301 F   **Rapid Application Development**

L T P   50 Marks**Class Work:**
3 1 -   100 Marks**Exam:**
                                            150 Marks**Total:**
                                            3 Hrs.**Duration of Exam:**

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Visual Programming Environment: Concept of procedure and event oriented languages, Integrated Development

Environment for VC++ and Visual Basic, Components of Visual C++ and Visual Basic.

Section-B

Parts of Visual C++ Program: Application object, main window object, view object, document object, Document-View architecture and its advantages, dEvent oriented windows Programming, device context, Microsoft Foundation Classes- an Overview, Simple MFC application, API's .

Section-C

Reading keystrokes, handling mouse, creating menus, toolbars, buttons, status bar prompts, dialog box, check box, radio buttons, list boxes, combo boxes, sliders, multiple documents.

Section-D

Serialization, file handling, debugging. DLL's, OLE Object Technologies, Creating Internet Programs using Visual C++ and Visual Basic, Creating Active X Controls, connecting to Database (using DAO/ ADO/ RDO) using Visual Basic and Visual C++.

Text Books
- Microsoft Visual C++ By Steven Holzner (Pub: BPB)
- nd
- Visual C++ Programming, 2 edition by Steven Holzner(Pub: PHI)
- Using Visual Basic for Applications By Paul Sanna(Pub: PHI)
- Visual Basic Programming By Steven Holzner
    MSDN Help

Reference Books
- Visual C++: From the ground Up By Mucller (Pub :TMH)
- Programming Visual C++ by David J. Kruglinski

IT-303 F   Systems Programming & System Administration

L	T	P				
3	1	–	Class Work	:	50	Marks
			Exam	:		100 Marks
			Total	:		150 Marks

Duration of Exam :3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Evolution of Components Systems Programming, Assemblers, Loaders, Linkers, Macros, Compilers. software tools, Text editors, Interpreters and program generators, Debug Monitors, Programming environment.
Compiler: Brief overview of compilation process, Incremental compiler, Assembler: Problem statement, single phase and two phase assembler, symbol table; Loader schemes, compile and go Loader, general loader schemes, absolute loader, Subroutine linkage, Reallocating loader, Direct linkage Loader, Binders, Linking loader, overlays.

Section-B

Macro language and macro-processor, macro instructions, features of macro facility, macro instruction arguments, conditional macro expansion, macro calls with macro instruction defining macros.
Theoretical Concept of Unix Operating System: Basic features of operating system; File structure: CPU scheduling; Memory management: swapping, demand paging; file system: block and fragments, inodes, directory structure; User to user communication.

Section-C

Getting Started with Unix: User names and groups, logging in; Format of Unix commands; Changing your password; Characters with special meaning; Unix documentation; Files and directories; Current directory, looking at the directory contents, absolute and relative pathnames, some Unix directories and files; Looking at the file contents; File permissions; basic operation on files; changing permission modes; Standard files, standard output; Standard input, standard error; filters and pipelines; Processes; finding out about processes; Stopping background process; Unix editor vi.
Test Manipulation: Inspecting files; File statistics; Searching for patterns; Comparing files; Operating on files; Printing files; Rearranging files; Sorting files; Splitting files; Translating characters; AWK utility.

Section-D

Shell Programming: Programming in the Borne and C-Shell; Wild cards; Simple shell programs; Shell variables; Shell programming constructs; interactive shell scripts; Advanced features.
System Administration: Definition of system administration; Booting the system; Maintaining user accounts; File systems and special files; Backups and restoration; Role and functions of a system manager. Overview of the linux. operating system

Text Books:
- Systems Programming by Donovan, TMH.
- The unix programming environment by Brain Kernighen & Rob Pike, 1984, PHI & Rob Pike.
- Design of the Unix operating system by Maurich Bach, 1986, PHI.
- Introduction to UNIX and LINUX by John Muster, 2003, TMH.

Reference Book:
Advanced Unix programmer's Guide by Stephen Prato, BPB
Unix- Concept and applications by Sumitabha Das, 2002, T.M..H

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IT-305    F           Computer    Networks
L    T    P                       Class  Work    :    50 Marks
3    1    -                       Exam            :    100 Marks
                                  Total           :    150 Marks
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Duration of Exam :3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

OSI Reference Model and Network Architecture: Introduction to Computer Networks, Example networks

ARPANET, Internet, Private Networks, Network Topologies: Bus-, Star-, Ring-, Hybrid -, Tree -, Complete -, Irregular – Topology; Types of Networks : Local Area Networks, Metropolitan Area Networks, Wide Area Networks; Layering architecture of networks, OSI model, Functions of each layer, Services and Protocols of each layer

Section-B

TCP/IP: Introduction, History of TCP/IP, Layers of TCP/IP, Protocols, Internet Protocol, Transmission Control Protocol , User Datagram Protocol, IP Addressing, IP address classes, Subnet Addressing, Internet Control Protocols, ARP, RARP, ICMP, Application Layer, Domain Name System, Email – SMTP, POP,IMAP; FTP, NNTP, HTTP, Overview of IP version 6.

Section-C

Local Area Networks: Introduction to LANs, Features of LANs, Components of LANs, Usage of LANs, LAN Standards, IEEE 802 standards, Channel Access Methods, Aloha, CSMA, CSMA/CD, Token Passing, Ethernet, Layer 2 & 3 switching, Fast Ethernet and Gigabit Ethernet, Token Ring, LAN interconnecting devices: Hubs, Switches, Bridges, Routers, Gateways.
Wide Area Networks: Introduction of WANs, Routing, Congestion Control, WAN Technologies, Distributed Queue Dual Bus (DQDB),

Section-D

Synchronous Digital Hierarchy (SDH)/ Synchronous Optical Network (SONET), Asynchronous Transfer Mode (ATM), Frame Relay.,Wireless Links.
Introduction to Network Management: Remote Monitoring Techniques: Polling, Traps, Performance Management, Class of Service, Quality of Service, Security management, Firewalls, VLANs, Proxy Servers, Introduction to Network Operating Systems: Client-Server infrastructure, Windows NT/2000.

Text Book:
  ☐ Computer Networks (3rd edition), Tanenbaum Andrew S., International edition, 1996.

Reference Books:
  ☐ Data Communications, Computer Networks and Open Systems (4th edition), Halsall Fred, 2000, Addison Wesley, Low Price Edition.
  ☐ Business Data Communications, Fitzgerald Jerry,.
  ☐   ndComputer Networks – A System Approach, Larry L.
  ☐ Peterson & Bruce S. Davie, 2 Edition
      Computer Networking – ED Tittel , 2002, T.M.H.

CSE-301   F   Principles   of   Operating   Systems

L	T	P			
3	1	–	**Class Work**	:	50 Marks
			Exam	:	100 Marks
			Total	:	150 Marks

Duration   of   Exam :   3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction: Introduction to Operating System Concepts (including Multitasking, multiprogramming, multi user,

Multithreading etc)., Types of Operating Systems: Batch operating system, Time-sharing systems, Distributed OS, Network OS, Real Time OS; Various Operating system services, architecture, System programs and calls.

Process Management: Process concept, process scheduling, operation on processes; CPU scheduling, scheduling criteria, scheduling algorithms -First Come First Serve (FCFS), Shortest-Job-First (SJF), Priority Scheduling, Round Robin(RR), Multilevel Queue Scheduling.

Section-B

Memory Management: Logical & Physical Address Space, swapping, contiguous memory allocation, non-contiguous memory allocation paging and segmentation techniques, segmentation with paging; virtual memory management - Demand Paging & Page-Replacement Algorithms; Demand Segmentation.

Section-C

File System: Different types of files and their access methods, directory structures, various allocation methods, disk scheduling and management and its associated algorithms, Introduction to distributed file system.

Process-Synchronization & Deadlocks: Critical Section Problems, semaphores; methods for handling deadlocks-deadlock prevention, avoidance & detection; deadlock recovery.

Section D

I/O Systems: I/O Hardware, Application I/O Interface, Kernel, Transforming I/O requests, Performance Issues and Threads
Unix System And Windows NT Overview

Unix system call for processes and file system management, Shell interpreter, Windows NT architecture overview, Windows NT file system.

Text Books:
- ☐ Operating System Concepts by Silberchatz et al, 5th edition, 1998, Addison-Wesley.
- ☐ Modern Operating Systems by A. Tanenbaum, 1992, Prentice-Hall.
- ☐ Operating Systems Internals and Design Principles by William Stallings,4th edition, 2001, Prentice-Hall

Reference Books:
- ☐ Operating System By Peterson , 1985, AW.
- ☐ Operating System By Milankovic, 1990, TMH.
- ☐ Operating System Incorporating With Unix & Windows By Colin Ritche, 1974, TMH.
- ☐ Operating Systems by Mandrik & Donovan, TMH
- ☐ Operating Systems By Deitel, 1990, AWL.
- ☐ Operating Systems – Advanced Concepts By Mukesh Singhal , N.G. Shivaratri, 2003, T.M.H

EE-309-F   Microprocessors   and   Interfacing

L	T	P			
3	1	0			

Class Work	:	50 Marks
Exam	:	100 Marks
Total	:	150 Marks

Duration of Exam :	3 HRS

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section A

THE 8085 PROCESSOR :

Introduction to microprocessor, 8085 microprocessor : Architecture, instruction set, interrupt structure, and Assembly language programming.

Section B

THE 8086 MICROPROCESSOR ARCHITECTURE :

Architecture, block diagram of 8086, details of sub-blocks such as EU, BIU; memory segmentation and physical address computations, program relocation, addressing modes, instruction formats, pin diagram and description of various signals

Section C

INSTRUCTION SET OF 8086 :

Instruction execution timing, assembler instruction format, data transfer instructions, arithmetic instructions, branch instructions, looping instructions, NOP and HLT instructions, flag manipulation instructions, logical instructions, shift and rotate instructions, directives and operators, programming examples.

Section D

INTERFACING DEVICE :

8255 Programmable peripheral interface, interfacing keyboard and seven segment display, 8254 (8253) programmable interval timer, 8259A programmable interrupt controller, Direct Memory Access and 8237 DMA controller.

TEXT BOOKS :

1. Microprocessor Architecture, Programming & Applications with 8085 : Ramesh S Gaonkar; Wiley Eastern Ltd.
2. The Intel Microprocessors 8086- Pentium processor : Brey; PHI

REFERENCE BOOKS:
1. Microprocessors and interfacing : Hall; TMH
2. The 8088 & 8086 Microprocessors-Programming, interfacing,Hardware & Applications :Triebel & Singh; PHI
3. Microcomputer systems: the 8086/8088 Family: architecture, Programming & Design : Yu-Chang Liu & Glenn A Gibson; PHI.
4. Advanced Microprocessors and Interfacing : Badri Ram; TMH

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CSE  -303  F          Computer   Graphics
L  T  P                       Class   Work   :   50 Marks
3  1  -                       Exam           :   100 Marks
                             Total          :   150 Marks

                             Duration  of  Exam  :   3 Hrs.
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NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to Computer Graphics: What is Computer Graphics, Computer Graphics Applications, Computer

Graphics Hardware and software, Two dimensional Graphics Primitives: Points and Lines, Line drawing algorithms: DDA, Bresenham's; Circle drawing algorithms: Using polar coordinates, Bresenham's circle drawing, mid point circle drawing algorithm; Filled area algorithms: Scanline: Polygon filling algorithm, boundary filled algorithm.

Section-B

Two/Three Dimensional Viewing: The 2-D viewing pipeline, windows, viewports, window to view port mapping;

Clipping: point, clipping line (algorithms):- 4 bit code algorithm, Sutherland-cohen algorithm, parametric line clipping algorithm (Cyrus Beck).

Polygon clipping algorithm: Sutherland-Hodgeman polygon clipping algorithm. Two dimensional transformations: transformations, translation, scaling, rotation, reflection, composite transformation.

Section-C

Three-dimensional transformations: Three dimensional graphics concept, Matrix representation of 3-D

Transformations, Composition of 3-D transformation.

Viewing in 3D: Projections, types of projections, the mathematics of planner geometric projections, coordinate systems.

Hidden surface removal: Introduction to hidden surface removal. The Z- buffer algorithm, scanline algorithm, area sub-division algorithm.

Section-D

Representing Curves and Surfaces: Parametric representation of curves: Bezier curves, B-Spline curves. Parametric

representation of surfaces; Interpolation method.

Illumination, shading, image manipulation: Illumination models, shading models for polygons, shadows, transparency.

What is an image? Filtering, image processing, geometric transformation of images.

Text Books:
- ☐ Computer Graphics Principles and Practices second edition by James D. Foley, Andeies van Dam, Stevan K. Feiner and Johb F. Hughes, 2000, Addision Wesley.
- ☐ Computer Graphics by Donald Hearn and M.Pauline Baker, 2nd Edition, 1999, PHI

Reference Books:
- ☐ Procedural Elements for Computer Graphics – David F. Rogers, 2001, T.M.H Second Edition
- ☐ Fundamentals of 3Dimensional Computer Graphics by Alan Watt, 1999, Addision Wesley.
- ☐ Computer Graphics: Secrets and Solutions by Corrign John, BPB
- ☐ Graphics, GUI, Games & Multimedia Projects in C by Pilania & Mahendra, Standard Publ.
- ☐ Computer Graphics Secrets and solutions by Corrign John, 1994, BPV
- ☐ Introduction to Computer Graphics By N. Krishanmurthy T.M.H 2002

IT-307   F   Rapid   Application   Development Lab

L	T	P			
-	-	2			

Class Work	:	25 Marks
Exam	:	25 Marks
Total	:	50 Marks

Duration of Exam : 3 Hrs.

1. Study window's API's? Find out their relationship with MFC classes. Appreciate how they are helpful in finding complexities of window's programming?

2. Get familiar with the essential classes in a typical (document view architecture) VC program and their relationships with each other.

3. Write a program to handle the mouse event right click on client area and display a message box as "Right Button Click".

4. Create a simple model dialog box to read the information about a student i.e. name, roll no. class using appropriate fields.

5. Write a simple console application to create archive class object from file class that reads and stores a simple structure (record).

6. Create a simple database in MS access and connect it to Visual Basic using ADO or DAO.

7. Write a program that reads a text and changes its font, font size as selected by the user from different fonts contained in a list box.

8. With the help of Visual Basic, created an object of excel application and implement any function of it.

9. Write a simple program that displays an appropriate message when an illegal operation is performed, using error handling technique in VB.

10. Make an active X control of your own using Visual Basic.

Note:
At least 10 experiments are to be performed by the students in the semester

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CSE-309   F      Computer   Graphics Lab

L  T  P                          Class Work    :   50 Marks
-  -  3                          Exam          :   50 Marks
                                 Total         :   100 Marks

                                 Duration of Exam :   3 Hrs.
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List of programs to be developed

1. Write a program for 2D line drawing as Raster Graphics Display.

2. Write a program for circle drawing as Raster Graphics Display.

3. Write a program for polygon filling as Raster Graphics Display

4. Write a program for line clipping.

5. Write a program for polygon clipping.

6. Write a program for displaying 3D objects as 2D display using perspective transformation.

7. Write a program for rotation of a 3D object about arbitrary axis.

8. Write a program for Hidden surface removal from a 3D object.

Note:

At least 5 to 10 more exercises to be given by the teacher concerned.

CSE-313   F   Operating   Systems Lab

L	**T**	**P**	**Class Work**	: 25 Marks
-	-	2	**Exam**	: 25 Marks
			Total	: 50 Marks

Duration of Exam : 3 Hrs.

- ☐ Study of WINDOWS 2000 Operating System.

- ☐ Administration of WINDOWS 2000 (including DNS,LDAP, Directory Services)

- ☐ Study of LINUX Operating System (Linux kernel, shell, basic commands pipe & filter commands).

- ☐ Administration of LINUX Operating System.

- ☐ Writing of Shell Scripts (Shell programming).

- ☐ AWK programming.

Note:
At least 5 to 10 more exercises to be given by the teacher concerned.

EE-329-F   **MICROPROCESSORS   AND   INTERFACING   LAB**

L   T   P
0   0   2

Class Work	:25 Marks
Exam	:25 Marks
Total	:50 Marks
Duration Of Exam :	3 Hrs

List of Experiments:

1. Study of 8085 Microprocessor kit.

2. Write a program using 8085 and verify for :
    a. Addition of two 8-bit numbers.
    b. Addition of two 8-bit numbers (with carry).

3. Write a program using 8085 and verify for :
    a. 8-bit subtraction (display borrow)
    b. 16-bit subtraction (display borrow)

4. Write a program using 8085 for multiplication of two 8- bit numbers by repeated addition method. Check for minimum number of additions and test for typical data.

5. Write a program using 8085 for multiplication of two 8- bit numbers by bit rotation method and verify.

6. Write a program using 8085 for division of two 8- bit numbers by repeated subtraction method and test for typical data.

7. Write a program using 8085 for dividing two 8- bit numbers by bit rotation method and test for typical data.

8. Study of 8086 microprocessor kit

9. Write a program using 8086 for division of a defined double word (stored in a data segment) by another double Word division and verify.

10. Write a program using 8086 for finding the square root of a given number and verify.

11. Write a program using 8086 for copying 12 bytes of data from source to destination and verify.

12. Write a program using 8086 and verify for:
    a. Finding the largest number from an array.
    b. Finding the smallest number from an array.

13. Write a program using 8086 for arranging an array of numbers in descending order and verify.

14. Write a program using 8086 for arranging an array of numbers in ascending order and verify.

15. Write a program for finding square of a number using look-up table and verify.

16. Write a program to interface a two-digit number using seven-segment LEDs. Use 8085/8086 microprocessor and 8255 PPI.

17. Write a program to control the operation of stepper motor using 8085/8086 microprocessor and 8255 PPI.

Note:

At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by the concerned institution as per the scope of the syllabus of EE-309-C.

M.D. UNIVERSITY, ROHTAK

Scheme of studies & Examination
Bachelor of Technology (Information Technology)
Semester - VI
'F' Scheme effective from 2010-11

S. No.	Course No.	Subject	Teaching Schedule				Examination Schedule				Duration of Exam (Hours)
			L	T	P	Total	Marks of Class work	Theory	Practical	Total	
1	IT-302 F	Network Programming	3	1		4	50	100	-	150	3
2	CSE-302 F	Principles of Software Engineering (CSE,IT)	3	1	-	4	50	100	-	150	3
3	CSE-304 F	Intelligent Systems (CSE,IT)	3	1	-	4	50	100	-	150	3
4	CSE-307 F	Web Development (Common with CSE – V Sem,)	3	1	-	4	50	100	-	150	3
5	EE-402-F	Wireless Communication (CSE, IT and Common with 8 Sem–EL)	3	1	-	4	50	100	-	150	3
6	MATHE-302-F	Operations Research (Commom with CSE 8th Semester)	3	1	-	4	50	100	-	150	3
7	IT-304 F	Network Programming Lab. (EL,IT, AEI)	-	-	2	2	50	-	50	100	3
8	CSE-306 F	Intelligent Systems Lab. (CSE,IT)	-	-	3	3	25	-	25	50	3
9	CSE-311 F	Web Development & Core JAVA Lab. (Common with V Sem – CSE)	-	-	2	2	25	-	25	50	3
11	GPIT-302 F	General Proficiency	-	-	-	-	50	-	-	50	
		TOTAL	18	6	7	31	425	600	75	1150	-

Note:

1) Each student has to undergo practical training of 6 weeks during summer vacation and its evaluation shall be carried out in the VII semester.

2) Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

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IT-302    F         Network    Programming
L  T  P                        Class   Work   :   50 Marks
3  1  -                        Exam           :   100 Marks
                               Total          :   150 Marks
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Duration of Exam :3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to networking, TC/IP Protocol architecture, Classful internet addresses, subnets, super netting, address resolution Protocol (RAP) and RARP, IP datagram format, UDP and TCP/data grams , ICMP its purpose , FINGER, NET STAT details & IPconfig, Ping, TRACERT, ROUTE.

Section-B

Socket introduction, elementary TCP sockets, TCP client sever, I/O functions, select& poll functions, socket options elementary UDP sockets, elementary node and address conversions, echo service (TCP and UDP).

Section-C

Algorithm and issues in server software design :iterative connectionless servers, (UDP), Iterative, connection oriented servers (TCP), single process, concurrent servers multiprotocol servers (TCP,UDP), multi service servers (TCP,UDP).

Section-D

Remote procedure call concept (RCP) :RPC models, analogy between RPC of client and server, remote programs and procedures, their multiple versions and mutual exclusion communication semantics, RPC retransmits, dynamic port mapping ,authentication.Network file system concept of data link access, debugging techniques ,Routing sockets, broadcasting to mobile network.

Text Books:
- Unix Network programming Vol -2nd edition, W.Richard Stevens
- Internet working with TCP/IP Vol-1, Doubles e-commer.
- Internetworking TCP/IP Vol III Doubles E comer, David L.Stevens

Reference Book:
- Internetworking with TCP/IP, Vol II

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CSE-302    F       Principles    of   Software    Engineering
L   T   P                         Class   Work    :    50 Marks
3   1   -                         Exam             :   100 Marks
                                  Total            :   150 Marks

                                  Duration   of   Exam  :    3 Hrs.
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NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction: The process, software products, emergence of software engineering, evolving role of software, software life cycle models, Software Characteristics, Applications, Software crisis.

Software project management: Project management concepts, software process and project metrics Project planning, project size estimation metrics, project estimation Techniques, empirical estimation techniques, COCOMO- A Heuristic estimation techniques, staffing level estimation, team structures, staffing, risk analysis and management, project scheduling and tracking.

Section-B

Requirements Analysis and specification requirements engineering, system modeling and simulation Analysis principles modeling, partitioning Software, prototyping: , Prototyping methods and tools; Specification principles, Representation, the software requirements specification and reviews Analysis Modeling: Data Modeling, Functional modeling and information flow: Data flow diagrams, Behavioral Modeling; The mechanics of structured analysis: Creating entity/ relationship diagram, data flow model, control flow model, the control and process specification; The data dictionary; Other classical analysis methods.

System Design: Design concepts and principles: the design process: Design and software quality, design principles; Design concepts: Abstraction, refinement, modularity, software architecture, control hierarchy, structural partitioning, data structure, software procedure, information hiding; Effective modular design: Functional independence, Cohesion, Coupling; Design Heuristics for effective modularity; The design model; Design documentation.

Section-C

Architectural Design: Software architecture, Data Design: Data modeling, data structures, databases and the data warehouse, Analyzing alternative Architectural Designs ,architectural complexity; Mapping requirements into a software architecture; Transform flow, Transaction flow; Transform mapping: Refining the architectural design.

Testing and maintenance: Software Testing Techniques, software testing fundamentals: objectives, principles, testability; Test case design, white box testing, basis path testing: Control structure testing: Black box testing, testing for specialized environments ,architectures and applications. Software Testing Strategies: Verification and validation, Unit testing, Integration testing,; Validation testing, alpha and beta testing; System testing: Recovery testing, security testing, stress testing, performance testing; The art of debugging, the debugging process debugging approaches. Software re-engineering , reverse engineering ,restructuring, forward engineering.

Section-D

Software Reliability and Quality Assurance :Quality concepts, Software quality assurance , SQA activities;

Software reviews: cost impact of software defects, defect amplification and removal; formal technical reviews: The review meeting, review reporting and record keeping, review guidelines; Formal approaches to SQA; Statistical software quality assurance; software reliability: Measures of reliability and availability ,The ISO 9000 Quality standards: The ISO approach to

quality assurance systems, The ISO 9001 standard, Software Configuration Management.
Computer Aided software Engineering: CASE, building blocks, integrated case environments and architecture, repository.

Text Book:
- ☐ Software Engineering – A Practitioner's Approach, Roger S. Pressman, 1996, MGH.

Reference Books:
- ☐ Fundamentals of software Engineering, Rajib Mall, PHI
- ☐ th
- ☐ Software Engineering by Ian sommerville, Pearson Edu, 5 edition, 1999, AW,
- ☐ Software Engineering – David Gustafson, 2002, T.M.H
  Software Engineering Fundamentals Oxford University, Ali Behforooz and Frederick J. Hudson 1995
- ☐ JW&S,
  An Integrated Approach to software engineering by Pankaj jalote , 1991 Narosa,

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CSE-304    F              Intelligent   Systems

L    T    P                       Class   Work    :    50 Marks
3    1    -                       Exam            :    100 Marks
                                  Total           :    150 Marks

                                  Duration  of  Exam  :   3 Hrs.
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NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Foundational issues in intelligent systems: Foundation and history of AI, Ai problems and techniques – AI

programming languages, introduction to LISP and PROLOG- problem spaces and searches, blind search strategies, Breadth first- Depth first- heuristic search techniques Hill climbing: best first- A * algorithm AO* algorithm-game tree, Min max algorithms, game playing- alpha beta pruning.

Section-B

Knowledge representation issues, predicate logic- logic programming, semantic nets- frames and inheritance, constraint propagation, representing knowledge using rules, rules based deduction systems.
Reasoning under uncertainty, review of probability, Baye's probabilistic interferences and Dempster shafer theory, Heuristic methods,

Section-C

Symbolic reasoning under uncertainty, Statistical reasoning, Fuzzy reasoning, Temporal reasoning, Non monotonic reasoning. Planning, planning in situational calculus, representation for planning, partial order planning algorithm,

Section-D

Learning from examples, discovery as learning, I earning by analogy, explanation based learning, neural nets, genetic algorithms.
Principles of Natural language processing, rule based systems architecture, Expert systems, knowledge acquisition concepts, AI application to robotics, and current trends in intelligent systems.

Text Book:
☐ Artificial Intelligence: A Modern Approach,. Russell & Norvig. 1995, Prentice Hall.

Reference Books:
☐ Artificial Intelligence, Elain Rich and Kevin Knight, 1991, TMH.
☐ Artificial Intelligence-A modern approach, Staurt Russel and peter norvig, 1998, PHI.
☐   rd
Artificial intelligence, Patrick Henry Winston:, 1992, Addition Wesley 3 Ed.,

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CSE-   307   F        Web   Development
L   T   P                          Class    Work    :    50 Marks
3   1   -                          Exam            :    100 Mark
                                   Total           :    150 Marks

                                   Duration  of  Exam  :   3 Hrs.
```

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction to the Internet, The world wide web: The idea of hypertext and hyper media; How the web

works-HTTP, HTML and URLs; How the browser works-MIME types, plugins and helper applications; The standards-HTML, XML, XHTML and the W3C.

Hypertext markup language: The anatomy of an HTML document; Marking up for structure and style: basic page markup, absolute and relative links, ordered and unordered lists, embedding images and controlling appearance, table creation and use, frames, nesting and targeting.

Descriptive markup: Meta tags for common tasks, semantic tags for aiding search, the doubling code and RDF.

Section-B

Separating style from structure with style sheets: Internal style specifications within HTML, External linked

style specification using CSS, page and site design considerations.

Client side programming: Introduction to the JavaScript syntax, the JavaScript object model, Event handling, Output in JavaScript, Forms handling, miscellaneous topics such as cookies, hidden fields, and images; Applications.

Section-C

Server side programming: Introduction to Server Side Technologies CGI/ASP/JSP., Programming languages for

server Side Scripting, Configuring the server to support CGI, applications; Input/ output operations on the WWW, Forms processing, (using PERL/VBSCRIPT/JavaSCIPT)

Section-D

Other dynamic content technologies: introduction to ASP & JSP, Delivering multimedia over web pages, The

VRML idea, The Java phenomenon-applets and servelets, issues and web development.

Introduction to Microsoft .NET Technology and its comparison with the competing Technologies.

Text books:
☐   Beginning XHTML by Frank Boumpery, Cassandra Greer, Dave Raggett, Jenny Raggett, Sebastian
                                              st
☐   Schnitzenbaumer & ted Wugofski, 2000, WROX press (Indian Shroff Publ. SPD) 1 edition
         HTML & XHTML: The Definitive Guide by Chuck Musciano, Bill Kennedy,2000, 4th Edi.

Reference books:
☐   XHTML Black Book by Steven Holzner, 2000
☐   CGI Programming on the World Wide Web. O'Reilly Associates.
☐   Web Technologies By Achyut S Godbole , Atul Kahate, 2003, T.M.H
☐   Scott Guelich, Shishir Gundararam, Gunther Birzniek; CGI Programing with Perl 2/e   O'Reilly.
☐   Doug Tidwell, James Snell, Pavel Kulchenko; Programming Web services, O'Reilly.
☐   Intranets by James D.Cimino, 1997, Jaico Publ.
☐   Internet and Web Technologies – Raj Kamal, 2002, T.M.H

EE-402-F   **WIRELESS   COMMUNICATION**

L T P	**Class Work**	:	50 Marks
3 1 0	**Exam**	:	100 Marks
	Total	:	150 Marks

Duration Of Exam :3 Hrs

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section-A

Introduction To Wireless Communication Systems: Evolution of mobile radio communications, examples of

wireless comm. systems, paging systems, Cordless telephone systems, comparison of various wireless systems.
Modern Wireless Communication Systems: Second generation cellular networks, third generation wireless networks, wireless in local loop, wireless local area networks, Blue tooth and Personal Area networks.

Section-B

Introduction To Cellular Mobile Systems: Spectrum Allocation, basic Cellular Systems, performance Criteria, Operation of cellular systems, analog cellular systems, digital Cellular Systems.
Cellular System Design Fundamentals: Frequency Reuse, channel assignment strategies, handoff Strategies, Interference and system capacity, tracking and grade off service, improving coverage and capacity.

Section-C

Multiple Access Techniques For Wireless Communication: Introduction to Multiple Access, FDMA, TDMA,

Spread Spectrum multiple Access, space division multiple access, packet ratio, capacity of a cellular systems.
Wireless Networking: Difference between wireless and fixed telephone networks, development of wireless networks, fixed network transmission hierarchy, traffic routing in wireless networks, wireless data services,

Section-D

Intelligent Cell Concept and Application: common channel signaling, ISDN (Integrated Services digital Networks), advanced intelligent networks. Intelligent cell concept, applications of intelligent micro-cell Systems, in-Building Communication, CDMA cellular Radio Networks.

Text Books:

1. Wireless Communications: Theodore S. Rappaport; Pearsons.
2. Mobile Cellular Telecommunication: W.C.Y.Lee; McGraw Hill

Reference Book:

1. Mobile Communications: Jochen Schiller; Pearson

L T   MATHE-302-F   OPERATIONS RESEARCH

3 1 -

Class Work : 50 Marks
Exam :100 Marks
Total : 150 Marks
Duration of Exam : 3 Hrs.

NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.

Section – A

Development – Definition– Characteristics and Phases – Types of models – operation Research models – applications.
ALLOCATION : Linear Programming Problem Formulation – Graphical solution – Simplex method – Artificial variables techniques -Two–phase method, Big-M method – Duality Principle.

Section – B

TRANSPORTATION PROBLEM – Formulation – Optimal solution, unbalanced transportation problem – Degeneracy. Assignment problem – Formulation – Optimal solution - Variants of Assignment Problem-Traveling Salesman problem.

REPLACEMENT : Introduction – Replacement of items that deteriorate with time – when money value is not counted and counted – Replacement of items that fail completely, group replacement. staffing problem, equipment renewal problem.

Section – C

System Reliability:Introduction-Definition-Failure Rates-Bath-tub shaped failure rate(Hazard Rate)-Reliability of systems-series arrangement and parallel arrangement-methods of assuring reliability.

Software Reliability - Comparison of Software and Hardware Reliability- Development of Software Reliability Models- Parameter Estimation of Models and Prediction of Reliability Levels- criteria to Compare Software Reliability models.

Section – D

Information Theory-Introduction, measure of Information, binary unit of information , entropy, properties of average measure of entropy, important relations for various entropies, set of axioms for an entropy function, uniqueness theorem, communication system, noiseless channel, cannel capacity,efficiency and redundanc,exected mutual information,encoding.

WAITING LINES : Introduction – Single Channel – Poisson arrivals – exponential service times – with infinite population and finite population models– Multichannel – Poisson arrivals – exponential service times with infinite population single channel Poisson arrivals.

TEXT BOOK :
1. Operations Research / S.D.Sharma-Kedarnath
2. Introduction to O.R/Taha/Pearsons

REFERENCES :
Operation Research/A.P.VERMA/SK KATARIA AND SONS

Operations Research/P.K.GUPTA & D.S.HIRA :

Software Reliability / John D.musa ,Anthony Iannino and Kajuzuhira Okumoto/ Mac-Grawhill

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IT-304   F          Network   Programming   Lab

L   T   P                          Class   Work    :    50 Marks
-   -   2                          Exam             :    50 Marks
                                   Total            :   100 Marks

                                   Duration  of  Exam  :  3 Hrs.
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The socket programming can be done on Unix/Linux operating or/and Windows. Socket programming, and the language can be C/VC++ and/or Java

1. Write a program to Create Sockets For Sending And Receiving Data.

2. Write a program to Obtain The Local & Remote Socket Address.

3. Write a program to Create Sockets For Handling Multiple Connection

4. Write a program to Obtain The Information About The (A) Host (B) Network (C) Protocols (D) Domains

5. Write a program to Manipulate The IP Address.

6. Write a program to Write A Telnet Client.

7. Write a program to Make An FTP Client

Note:

At least 5 to 10 more exercises to be given by the teacher concerned.

CSE-306   F   Intelligent   System   Lab

L   T   P
–   –   2

Class   Work   :   25 Marks
Exam   :   25 Marks
Total   :   50 Marks

Duration   of   Exam   :   3 Hrs.

1. Study of PROLOG.
   Write the following programs using PROLOG.

2. Write a program to solve 8 queens problem.

3. Solve any problem using depth first search.

4. Solve any problem using best first search.

5. Solve 8-puzzle problem using best first search

6. Solve Robot (traversal) problem using means End Analysis.

7. Solve traveling salesman problem.

Note:

At least 5 to 10 more exercises to be given by the teacher concerned.

CSE-311 F Web Development & Core JAVA Lab

L	T	P			
-	-	2	**Class Work**	:	25 Marks
			Exam	:	25 Marks
			Total	:	50 Marks

Duration of Exam : 3 Hrs.

Java programs using classes & objects and various control constructs such as loops etc , and data structures such as arrays , structures and functions.

Java programs for creating Applets for display of Images ,Texts and Animation

Programs related to interfaces & packages

Input output & Random files programs in java Java

programs using Event driven concept Programs

related to Network Programming

Development of Web site for the college or newspaper agency.

Books recommended for Lab.

- Java Elements – Principles of Programming in Java , Duane A. Bailey , Duane W. Bailey, 2000, T.M.H

- The Java Handbook by Patrick Naughton, TMH, N.Delhi