

M. D. UNIVERSITY, ROHTAK
Scheme of studies & Examination
Bachelor of Technology-Part Time (Computer Science & Engineering)
Semester –I Scheme Effective from 2012-13

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	MATH-201-F	Mathematics -III	3	2	-	5	50	100	-	150	3
2	CSE-201 F	Data Structures Using C	3	1	-	4	50	100	-	150	3
3	CSE-203 F	Discrete Structures	3	1	-	4	50	100	-	150	3
4	HUM-203-F	Fundamental of Management	3	1		4	50	100	-	150	3
5	IT-201-F	PC Lab	-	-	3	3	50	-	50	100	3
6	CSE-205-F	Data Structures Using C Lab	-	-	2	2	25	-	25	50	3
		TOTAL	12	5	5	22	275	400	75	750	

M. D. UNIVERSITY, ROHTAK
Scheme of studies & Examination
Bachelor of Technology - Part Time (Computer Science & Engineering)
Semester -II Scheme Effective from 2012-13

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	CSE-202-F	Data Base Management System	3	1	-	4	50	100	-	150	3
2	CSE-204-F	Programming Languages	3	1	-	4	50	100	-	150	3
3	HUM-201-F	ENGG. ECONOMICS	3	1	-	4	50	100	-	150	3
4	CSE-208-F	Internet Fundamentals	3	1		4	50	100	-	150	3
5	CSE-212-F	Data Base Management System lab	-	-	3	3	50		50	100	3
6	CSE-214-F	Internet Lab	-	-	2	2	25	-	25	50	3
7	GP-202-F	General Proficiency	-	-	2	2	50	-	-	50	3
8	GES-106-F	Environmental Studies	1	0	2	3	-	-	-	-	
		TOTAL	13	4	9	26	325	400	75	800	

M. D. UNIVERSITY, ROHTAK
Scheme of studies & Examination
Bachelor of Technology- Part Time (Computer Science & Engineering)
Semester -III Scheme Effective from 2012-13

S. No.	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam
			L	T	P	Total	Marks of Class work	Theory	Practical	Total	
1	EE-217-F	Digital & Analog Communication	3	1	-	4	50	100	-	150	3
2	EE-204-F	Digital Electronics	3	1	-	4	50	100	-	150	3
3	CSE-301-F	Principles of Operating System	3	1	-	4	50	100	-	150	3
4	EE-309-F	Microprocessors and Interfacing	3	1		4	50	100	-	150	3
5	EE-224-F	Digital Electronics Lab	-	-	3	3	50	-	50	100	3
6	CSE-313-F	O.S.Lab	-	-	2	2	25	-	25	50	3
7	EE-329-F	Microprocessors and Interfacing Lab.	-	-	2	2	25	-	25	50	3
		TOTAL	12	4	7	23	300	400	100	800	

M. D. UNIVERSITY, ROHTAK
Scheme of studies & Examination
Bachelor of Technology- Part Time (Computer Science & Engineering)
Semester - IV Scheme Effective from 2012-13

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-202-F	Object –Oriented Programming using C++	3	1	-	4	50	100	-	150	3
2	CSE-210-F	Computer Architecture and Organization	3	1	-	4	50	100	-	150	3
3	IT-305-F	Computer Networks	3	1	-	4	50	100	-	150	3
4	IT-303-F	Systems Programming & System Administration	3	1		4	50	100	-	150	3
5	IT-206-F	C++ Programming Lab.	-	-	2	2	25	-	25	50	3
6	CSE-310-F	Computer Network Lab	-	-	2	2	25	-	25	50	3
7	GP-302-F	General Proficiency	-	-	2	2	50	-	-	50	3
		TOTAL	12	4	6	22	300	400	50	750	

M. D. UNIVERSITY, ROHTAK
Scheme of studies & Examination
Bachelor of Technology- Part Time (Computer Science & Engineering)
Semester - V Scheme Effective from 2012-13

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	CSE-303-F	Computer Graphics	3	1	-	4	50	100	-	150	3
2	IT-204-F	Multimedia Technologies	3	1	-	4	50	100	-	150	3
3	CSE-305-F	Theory of Automata Computation	3	1	-	4	50	100	-	150	3
4	CSE-307-F	Web Development	3	1		4	50	100	-	150	3
5	CSE-311-F	Web Development & Core JAVA Lab.	-	-	2	2	25	-	25	50	3
6	CSE-309-F	Computer Graphics Lab	-	-	2	2	25	-	25	50	3
7	IT-208-F	Multimedia Tech. Lab	-	-	2	2	25	-	25	50	3
		TOTAL	12	4	6	22	275	400	75	750	

M.D. UNIVERSITY, ROHTAK
Scheme of studies & Examination
Bachelor of Technology - Part Time
(Computer Science & Engineering)
Semester - VI Scheme Effective from 2012-13

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	EE-310-F	Digital System Design	3	1	-	4	50	100	-	150	3
2	CSE-302-F	Principles of Software Engineering	3	1	-	4	50	100	-	150	3
3	CSE-306-F	Analysis & Design of Algorithm	3	1	-	4	50	100	-	150	3
4	CSE-304-F	Intelligent System	3	1		4	50	100	-	150	3
5	EE-330-F	Digital System Design Lab.	-	-	2	2	25	-	25	50	3
6	CSE-312-F	Visual Programming Lab.	-	-	2	2	25	-	25	50	3
7	CSE-308-F	Intelligent System Lab	-	-	3	3	25	-	25	50	3
			12	4	7	23	275	400	75	750	-

MATH-201-F

MATHEMATICS-III

L T P
3 2 0

Class Work marks : 50
Theory marks : 100
Total marks : 150
Duration of Exam : 3 hr

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

Fourier Series and Fourier Transforms : Euler's formulae, conditions for a Fourier expansion, change of interval, Fourier expansion of odd and even functions, Fourier expansion of square wave, rectangular wave, saw-toothed wave, half and full rectified wave, half range sine and cosine series.

Fourier integrals, Fourier transforms, Shifting theorem (both on time and frequency axes), Fourier transforms of derivatives, Fourier transforms of integrals, Convolution theorem, Fourier transform of Dirac-delta function.

Section-B

Functions of Complex Variable : Definition, Exponential function, Trigonometric and Hyperbolic functions, Logarithmic functions. Limit and Continuity of a function, Differentiability and Analyticity.

Cauchy-Riemann equations, necessary and sufficient conditions for a function to be analytic, polar form of the Cauchy-Riemann equations. Harmonic functions, application to flow problems. Integration of complex functions. Cauchy-Integral theorem and formula.

Section-C

Power series, radius and circle of convergence, Taylor's Maclaurin's and Laurent's series. Zeros and singularities of complex functions, Residues. Evaluation of real integrals using residues (around unit and semi circle only).

Probability Distributions and Hypothesis Testing : Conditional probability, Bayes theorem and its applications, expected value of a random variable. Properties and application of Binomial, Poisson and Normal distributions.

Section D

Testing of a hypothesis, tests of significance for large samples, Student's t-distribution (applications only), Chi-square test of goodness of fit.

Linear Programming: Linear programming problems formulation, Solving linear programming problems using (i) Graphical method (ii) Simplex method (iii) Dual simplex method.

TEXT BOOKS :

1. Engg Mathematics By Babu Ram, Pearson India
2. Advanced Engg. Mathematics : F Kreyszig.
3. Higher Engg. Mathematics : B.S. Grewal.

REFERENCE BOOKS :

1. Advance Engg. Mathematics : R.K. Jain, S.R.K.Iyenger.
2. Advanced Engg. Mathematics : Michael D. Greenberg.
3. Operation Research : H.A. Taha.
4. Probability statistics for Engineers : Johnson and. PHI

CSE-201 F

Data Structures Using 'C'
(CSE, EL, ECE, IT, ECE)

L T P
3 1

Class Work: 50

Exam: 100

Total: 150

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 Overview of C, Introduction, Stacks and Queues

Overview of 'C' :Introduction , Flow of Control, Input output functions, Arrays and Structures, Functions

Data structures and Algorithms: an overview : concept of data structure, choice of right data structures, types of data structures, basic terminology Algorithms, how to design and develop an algorithm: stepwise refinement, use of accumulators and counters; algorithm analysis, complexity of algorithms Big-oh notation.

Arrays : Searching Sorting: Introduction, One Dimensional Arrays, operations defined : traversal, selection, searching, insertion, deletion, and sorting

Searching: linear search, binary search; Sorting : selection sort, bubble sort, insertion sort, merge sort, quick sort, shell sort. Multidimensional arrays, address calculation of a location in arrays.

Stacks and queues: Stacks, array representation of stack. Applications of stacks. Queues, Circular queues, , array representation of Queues,. Deques, priority queues, Applications of Queues.

Section-B Pointers and Linked Lists;

Pointers: Pointer variables, Pointer and arrays, array of pointers, pointers and structures, Dynamic allocation.

Linked Lists: Concept of a linked list,. Circular linked list, doubly linked list, operations on linked lists. Concepts of header linked lists. Applications of linked lists, linked stacks, linked Queues.

Section-C Trees and Graphs

Trees: Introduction to trees, binary trees, representation and traversal of trees, operations on binary trees, types of binary trees, threaded binary trees, B Trees, . Application of trees.

Graphs : Introduction, terminology, 'set, linked and matrix' representation, operations on graphs, Applications of graphs.

Section-D file Handling and Advanced data Structure

Introduction to file handling, Data and Information, File concepts, File organization, files and streams, working with files. AVL trees, Sets, list representation of sets, applications of sets, skip lists

Text Book:

- x Data Structures using C by A. M. Tenenbaum, Langsam, Moshe J. Augentem, PHI Pub.
- x Data Structures using C by A. K. Sharma, Pearson

Reference Books:

- x Data Structures and Algorithms by A.V. Aho, J.E. Hopcroft and T.D. Ullman, Original edition, Addison-Wesley, 1999, Low Priced Edition.
- x Fundamentals of Data structures by Ellis Horowitz & Sartaj Sahni, Pub, 1983,AW
- x Fundamentals of computer algorithms by Horowitz Sahni and Rajasekaran.
- x Data Structures and Program Design in C By Robert Kruse, PHI,
- x Theory & Problems of Data Structures by Jr. Seymour Lipschetz, Schaum's outline by TMH
- x Introduction to Computers Science -An algorithms approach , Jean Paul Tremblay, Richard B. Bunt, 2002, T.M.H.
- x Data Structure and the Standard Template library – Willam J. Collins, 2003, T.M.H

CSE-203 F

Discrete Structures

L T P
3 1 -

Class Work: 50

Exam: 100

Total: 150

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: Set Theory and Propositional Calculus:

Introduction to set theory, Set operations, Algebra of sets, Duality, Finite and Infinite sets, Classes of sets, Power Sets, Multi sets, Cartesian Product, Representation of relations, Types of relation, Equivalence relations and partitions, Partial ordering relations and lattices Function and its types, Composition of function and relations, Cardinality and inverse relations

Introduction to propositional Calculus: Basic operations: AND(\wedge), OR(\vee), NOT(\sim), Truth value of a compound statement, propositions, tautologies, contradictions.

Section B: Techniques of Counting and Recursion and recurrence Relation:

Permutations with and without repetition, Combination. Polynomials and their evaluation, Sequences, Introduction to AP, GP and AG series, partial fractions, linear recurrence relation with constant coefficients, Homogeneous solutions, Particular solutions, Total solution of a recurrence relation using generating functions.

Section C: Algebraic Structures

Definition and examples of a monoid, Semigroup, Groups and rings, Homomorphism, Isomorphism and Automorphism, Subgroups and Normal subgroups, Cyclic groups, Integral domain and fields, Cosets, Lagrange's theorem

Section D: Section Graphs and Trees:

Introduction to graphs, Directed and Undirected graphs, Homomorphic and Isomorphic graphs, Subgraphs, Cut points and Bridges, Multigraph and Weighted graph, Paths and circuits, Shortest path in weighted graphs, Eulerian path and circuits, Hamilton paths and circuits, Planar graphs, Euler's formula, Trees, Spanning trees, Binary trees and its traversals

Text Book:

x Elements of Discrete Mathematics, C.L Liu, 1985, McGraw Hill

Reference Books:

- x Discrete Mathematics by Johnson Bough R., 5th Edition, PEA, 2001..
- x Concrete Mathematics: A Foundation for Computer Science, Ronald Graham, Donald Knuth and Oren Patashik, 1989, Addison-Wesley.
- x Mathematical Structures for Computer Science, Judith L. Gersting, 1993, Computer Science Press.
- x Applied Discrete Structures for Computer Science, Doerr and Levasseur, (Chicago: 1985,SRA
- x Discrete Mathematics by A. Chtewynd and P. Diggle (Modular Mathematics series), 1995, Edward Arnold, London,
- x Schaums Outline series: Theory and problems of Probability by S. Lipshutz, 1982, McGraw-Hill Singapore
- x Discrete Mathematical Structures, B. Kolman and R.C. Busby, 1996, PHI
- x Discrete Mathematical Structures with Applications to Computers by Tembley & Manohar, 1995, Mc Graw Hill.

HUM-203-F

FUNDAMENTALS OF MANAGEMENT

L T P
3 1 0

Class Work marks : 50
Theory marks : 100
Total marks : 150
Duration of Exam : 3 hr

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

Meaning of management, Definitions of Management, Characteristics of management, Management Vs. Administration. Management-Art, Science and Profession. Importance of Management. Development of Management thoughts.
Principles of Management. The Management Functions, Inter-relationship of Managerial functions.
Nature and Significance of staffing, Personnel management, Functions of personnel management, Manpower planning, Process of manpower planning, Recruitment, Selection; Promotion - Seniority Vs. Merit. Training - objectives and types of training.

Section-B

Production Management : Definition, Objectives, Functions and Scope, Production Planning and Control; its significance, stages in production planning and control. Brief introduction to the concepts of material management, inventory control; its importance and various methods.

Section-C

Marketing Management - Definition of marketing, Marketing concept, objectives & Functions of marketing.
Marketing Research - Meaning; Definition; objectives; Importance; Limitations; Process.
Advertising - meaning of advertising, objectives, functions, criticism.

Section-D

Introduction of Financial Management, Objectives of Financial Management, Functions and Importance of Financial Management. Brief Introduction to the concept of capital structure and various sources of finance.

BOOKS RECOMMENDED :

TEXT BOOKS :

- x Principles and Practice of Management - R.S. Gupta, B.D.Sharma, N.S. Bhalla. (Kalyani Publishers)
- x Organisation and Management - R.D. Aggarwal (Tata Mc Graw Hill)

REFERENCE BOOKS :

- x Principles & Practices of Management – L.M. Prasad (Sultan Chand & Sons)
- x Management – Harold, Koontz and Cyrilo Donell (Mc.Graw Hill).
- x Marketing Management – S.A. Sherlikar (Himalaya Publishing House, Bombay).
- x Financial Management - I.M. Pandey (Vikas Publishing House, New Delhi)
- x Management - James A.F. Stoner & R.Edward Freeman, PHI.

IT-201 F**PC Lab.**

L T P
- - 3

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

PC Software: Application of basics of MS Word 2000, MS Excel 2000, MS Power Point 2000, MS Access 2000.

1. To prepare the Your Bio Data using MS Word
2. To prepare the list of marks obtained by students in different subjects and show with the help of chart/graph the average, min and max marks in each subject.
3. Prepare a presentation explaining the facilities/infrastructure available in your college/institute.
4. Create a database of books in the library on a mini scale w.r.t. Computers and manipulate the database using different forms and reports.

PC Hardware :

1. To check and measure various supply voltages of PC.
2. To make comparative study of motherboards.
3. To observe and study various cables, connections and parts used in computer communication.
4. To study various cards used in a system viz. display card, LAN card etc.
5. To remove, study and replace floppy disk drive.
6. To remove, study and replace hard disk.
7. To remove, study and replace CD ROM drive.
8. To study monitor, its circuitry and various presents and some elementary fault detection.
9. To study printer assembly and elementary fault detection of DMP and laser printers.
10. To observe various cables and connectors used in networking.
11. To study parts of keyboard and mouse.
12. To assemble a PC.
13. Troubleshooting exercises related to various components of computer like monitor, drives, memory and printers etc.

Reference Books:

- x Complete PC upgrade & maintenance guide, Mark Mines, BPB publ.
- x PC Hardware: The complete reference, Craig Zacker & John Rouske, TMH
- x Upgrading and Repairing PCs, Scott Mueller, 1999, PHI,

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

CSE-202 F

Database Management Systems

L T P
3 1 -

Class Work: 50
Exam: 100
Total: 150
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, Client Server Arch., E-R Diagram and Keys

Overview of database Management System; Various views of data, data Models, Introduction to Database Languages. Advantages of DBMS over file processing systems, Responsibility of Database Administrator,

Introduction to Client/Server architecture, Three levels architecture of Database Systems, E-R Diagram (Entity Relationship), mapping Constraints, Keys, Reduction of E-R diagram into tables.

Section B: File Organization and Relational Model and Calculus:

Sequential Files, index sequential files, direct files, Hashing, B-trees Index files.
Relational Model, Relational Algebra & various operations, Relational and Tuple calculus.

Section C; Introduction to Query Languages :

QLB , QBE, Structured query language – with special reference of (SQL of ORACLE), integrity constraints, functional dependencies & NORMALISATION – (up to 4th Normal forms), BCNF (Boyce – code normal forms)

SECTION D:

Introduction to Distributed Data processing, parallel Databases, data mining & data warehousing, network model & hierarchical model, Introduction to transaction, properties of transaction and life cycle of transaction, Introduction to Concurrency control and Recovery systems., need of concurrency control and recovery system, problems in concurrent transactions.

Text Books:

- x Database System Concepts by A. Silberschatz, H.F. Korth and S. Sudarshan, 3rd edition, 1997, McGraw-Hill, International Edition.
- x Introduction to Database Management system by Bipin Desai, 1991, Galgotia Pub.

Reference Books:

- x Fundamentals of Database Systems by R. Elmasri and S.B. Navathe, 3rd edition, 2000, Addison-Wesley, Low Priced Edition.
- x An Introduction to Database Systems by C.J. Date, 7th edition, Addison-Wesley, Low Priced Edition, 2000.
- x Database Management and Design by G.W. Hansen and J.V. Hansen, 2nd edition, 1999, Prentice-Hall of India, Eastern Economy Edition.
- x Database Management Systems by A.K. Majumdar and P. Bhattacharyya, 5th edition, 1999, Tata McGraw-Hill Publishing.
- x A Guide to the SQL Standard, Date, C. and Darwen, H. 3rd edition, Reading, MA: 1994, Addison-Wesley.
- x Data Management & file Structure by Looms, 1989, PHI

CSE-204 F

Programming Languages

L T P
3 1 -

Class Work: 50
Exam: 100
Total: 150
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:

Syntactic and semantic rules of a Programming language, Characteristics of a good programming language, Programming language translators compiler & interpreters , Elementary data types – data objects, variable & constants, data types, Specification & implementation of elementary data types, Declarations ,type checking & type conversions , Assignment & initialization, Numeric data types, enumerations, Booleans & characters.

Section B: Structured data objects, Subprograms and Programmer Defined Data Type :

Structured data objects & data types , specification & implementation of structured data types, Declaration & type checking of data structure ,vector & arrays, records Character strings, variable size data structures , Union, pointer & programmer defined data objects, sets, files.

Evolution of data type concept, abstraction, encapsulation & information hiding, Subprograms, type definitions, abstract data types.

Section C: Sequence Control and Data Control:

Implicit & explicit sequence control, sequence control within expressions, sequence control within statement, Subprogram sequence control: simple call return, recursive subprograms, Exception & exception handlers, co routines, sequence control. Names & referencing environment, static & dynamic scope, block structure, Local data & local referencing environment, Shared data: dynamic & static scope. Parameter & parameter transmission schemes.

Section D: Storage Management, Programming languages:

Major run time elements requiring storage ,programmer and system controlled storage management & phases , Static storage management , Stack based storage management, Heap storage management ,variable & fixed size elements.Introduction to procedural, non-procedural ,structured, functional and object oriented programming language, Comparison of C & C++ programming languages.

Text Book:

- x Programming languages Design & implementation by T.W. Pratt, 1996, Prentice Hall Pub.
- x Programming Languages – Principles and Paradigms by Allen Tucker & Robert Noonan, 2002, TMH,

Reference Books:

- x Fundamentals of Programming languages by Ellis Horowitz, 1984, Galgotia publications (Springer Verlag),
- x Programming languages concepts by C. Ghezzi, 1989, Wiley Publications.,
- x Programming Languages – Principles and Paradigms Allen Tucker , Robert Noonan 2002, T.M.H.

HUM-201-F

ENGINEERING ECONOMICS

L T P
3 1 0

Class Work marks : 50
Theory marks : 100
Total marks : 150
Duration of Exam : 3 hr

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

Definition of Economics - various definitions, Nature of Economic problem, Production possibility curve Economic laws and their nature. Relation between Science, Engineering, Technology and Economics.

Concepts and measurement of utility, Law of Diminishing Marginal Utility, Law of equi-marginal utility - its practical application and importance.

Section-B

Meaning of Demand, Individual and Market demand schedule, Law of demand, shape of demand curve, Elasticity of demand, measurement of elasticity of demand, factors effecting elasticity of demand, practical importance & applications of the concept of elasticity of demand.

Meaning of production and factors of production; Law of variable proportions, Returns to scale, Internal and External economics and diseconomies of scale.

Section-C

Various concepts of cost - Fixed cost, variable cost, average cost, marginal cost, money cost, real cost opportunity cost. Shape of average cost, marginal cost, total cost etc. in short run and long run.

Meaning of Market, Types of Market - Perfect Competition, Monopoly, Oligopoly, Monoplistic Competition (Main features of these markets)

Section-D

Supply and Law of Supply, Role of Demand & Supply in Price Determination and effect of changes in demand and supply on prices. Nature and characteristics of Indian economy (brief and elementary introduction), Privatization - meaning, merits and demerits. Globalisation of Indian economy - merits and demerits. Elementary Concepts of VAT, WTO, GATT & TRIPS agreement.

TEXT BOOKS :

- x Principles of Economics : P.N. Chopra (Kalyani Publishers).
- x Modern Economic Theory – K.K. Dewett (S.Chand)

REFERENCE BOOKS:

- x A Text Book of Economic Theory Stonier and Hague (Longman's Landon)
- x Micro Economic Theory – M.L. Jhingan (S.Chand)
- x Micro Economic Theory - H.L. Ahuja (S.Chand)
- x Modern Micro Economics : S.K. Mishra (Pragati Publications)
- x Economic Theory - A.B.N. Kulkarni & A.B. Kalkundrikar (R.Chand & Co.)
- x Indian Economy : Rudar Dutt & K.P.M. Sundhram

CSE-208 F**Internet Fundamentals**

L	T	P
3	1	-

Class Work:	50
Exam:	100
Total:	150
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: Electronic Mail and Internet:

Introduction, advantages and disadvantages, Userids, Pass words, e-mail addresses, message components, message composition, mailer features, E-mail inner workings, E-mail management, Mime types, Newsgroups, mailing lists, chat rooms. Introduction to networks and internet, history, Working of Internet, Internet Congestion, internet culture, business culture on internet. Collaborative computing & the internet. Modes of Connecting to Internet, Internet Service Providers(ISPs), Internet address, standard address, domain name, DNS, IP.v6.Modems and time continuum, communications software; internet tools.

Section B: World Wide Web :

Introduction, Miscellaneous Web Browser details, searching the www: Directories search engines and meta search engines, search fundamentals, search strategies, working of the search engines, Telnet and FTP.
Introduction to Browser, Coast-to-coast surfing, hypertext markup language, Web page installation, Web page setup, Basics of HTML & formatting and hyperlink creation.
Using FrontPage Express, Plug-ins.

Section C: Languages:

Basic and advanced HTML, java script language, Client and Server Side Programming in java script. Forms and data in java script, XML basics.
Introduction to Web Servers: PWS, IIS, Apache; Microsoft Personal Web Server. Accessing & using these servers.

Section D: Privacy and security topics:

Introduction, Software Complexity, Encryption schemes, Secure Web document, Digital Signatures, Firewalls.

Text Book:

- x Fundamentals of the Internet and the World Wide Web, Raymond Greenlaw and Ellen Hepp – 2001, TMH
- x Internet & World Wide Programming, Deitel,Deitel & Nieto, 2000, Pearson Education

Reference Books:

- x Complete idiots guide to java script,. Aron Weiss, QUE, 1997
- x Network firewalls, Kironjeet syan -New Rider Pub.
- x www.secinf.com
- x www.hackers.com
- x Alfred Gkossbrenner-Internet 101 Computing MGH, 1996

CSE- 212 F**Database Management Systems Lab**

L T P
- - 3

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

I. Create a database and write the programs to carry out the following operation:

1. Add a record in the database
2. Delete a record in the database
3. Modify the record in the database
4. Generate queries
5. Generate the report
6. List all the records of database in ascending order.

II Develop two menu driven project for management of database system:

1. Library information system
 - a. Engineering
 - b. MCA
2. Inventory control system
 - a. Computer Lab
 - b. College Store
3. Student information system
 - c. Academic
 - d. Finance
4. Time table development system
 - e. CSE, IT & MCA Departments
 - f. Electrical & Mechanical Departments

Usage of S/w:

1. VB, ORACLE and/or DB2
2. VB, MSACCESS
3. ORACLE, D2K
4. VB, MS SQL SERVER 2000

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

CSE 214 F

Internets Lab.

L	T	P
-	-	3

Class Work:	25
Exam:	25
Total:	50
Duration of Exam:	3 Hrs.

Exercises involving:

- x Sending and receiving mails.
- x Chatting on the net.
- x Using FTP and Tel net server.
- x Using HTML Tags (table, form, image, anchor etc.).
- x Making a Web page of your college using HTML tags.

Note: At least 10 exercise to be given by the teacher concerned.

GP-202- F

GENERAL FITNESS FOR THE PROFESSION

L T P
- - 2

Class Work : 50 Marks

- x Quiz & Aptitude
- x Comprehension,
- x Communication for specifics.
- x Lets Speak
- x Composition skills- Formal letter writing based on the trends in practice in corporate culture.
- x Training on etiquettes & manners should be carried further and be observed during the general classes, if required even the faculty should imparted some training on the same.

GES-106F : ENVIRONMENTAL STUDIES

Theory 75 Marks

Field Work 25 Marks

(Practical)

Unit-1 the Multidisciplinary nature of environmental studies. Definition, scope and importance.

Unit-2 Natural Resources :

Renewable and non-renewable resources : Natural resources and associated problems.

a) Forest resources : Use and over-exploitation : deforestation, case studies. Timber extraction, mining dams and their effects on forests and tribal people.

b) Water resources : Use and over-utilisation of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.

c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources : World food problems, changes, caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, Water logging, salinity, case studies.

e) Energy resources : Growing energy needs; renewable and nonrenewable energy sources, use of alternate energy sources, case studies.

f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

* Role of an individual in conservation of natural resources.

* Equitable use of resources for sustainable lifestyles.

(8 lectures)

Unit-3 Ecosystems : * Concept of an ecosystem. * Structure and function of an ecosystem.

* Producers, consumers and decomposers. * Energy flow in the ecosystem.

* Ecological succession. * Food chains, food webs and ecological pyramids.

* Introduction, types, characteristic features, structure and function of the following eco-system

:

a. Forest ecosystem.

b. Grassland ecosystem.

c. Desert ecosystem.

d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Unit-4 Biodiversity and its conservation * Introduction - Definition : Genetic, Species and ecosystem diversity. * Biogeographical classification of India. * Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values. * Biodiversity at global, National and local levels. * India as a mega-diversity nation. * Hot-spots of biodiversity. * Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.

* Endangered and endemic species of India. * Conservation of biodiversity : In-situ and ex-situ conservation of biodiversity. (8 lectures)

Unit-5 Environmental pollution :Definition, causes, effects and control measures of :

- a) Air pollution.b) Water pollution
- c) Soil pollution
- d) Marine pollution
- e) Noise pollution
- f) Thermal pollution
- g) Nuclear hazards

* Solids waster management : causes, effects and control measures of urban and industrial wastes.* Role of an individual in prevention of pollution.

* Pollution cae studies.* Disaster management : floods, earthquake, cyclone and landslides.(8 lectures)

Unit-6 Social issues and the Environment :* From unsustainable to sustainable development.

* Urban problems related to energy.* Water conservation, rain water harvesting, watershed management.* Resettlement and rehabilitation of people : its problems and concerns case studies.* Environmental ethics : Issues and possible solutions.* Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.

* Wasteland reclamation.

* Consumerism and waste products.

* Environment Protrection Act.

* Air (Prevention and Control of pollution) Act.

* Water (Prevention and Control of pollution) Act.

* Wildlife Protection Act.

* Forest Conservation Act.

* Issues involved in enforcement of environmental legislation.

* Public awareness. (7 lectures)

Unit-7 Human population and the Environment.Population growth, variation among nations.

Population explosion- Family Welfare Programme.Environment and human health.

Human Rights.Value Education.HIV/AIDS.Woman and Child WelfareRole of Informatoin Technology in Environment and human health.

Case Studies. (6 lectures)

Unit-8 Field Work :* Visit to a local area to document environmental assets -

river/forest/grassland/hill/mountain.* Visit to a local polluted site-urban/Rural/ Industrial/ Agricultural.* Study of common plants, insects, birds.

* Study of simple ecosystems- pond, river, hill slopes, etc.

(Field work equal to 5 lecture hours).

References

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Pub. Ltd.Bikaner.
2. Bharucha, Frach, The Biodiversity of India, MApin Publishing Pvt. Ltd. Ahmedabad-380013, India, E-mail : mapin@icenet.net
- .3. Brunner R.C. 1989, Hazardous Waste Incineration, Mc. GrawHill Inc. 480p.
4. Clark R.S., Marine pollution, Slanderson Press Oxford (TB).
5. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Pub. House, Mumbai 1196 p.
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment (R).

8. Gleick, H.P., 1993. Water in crisis, Pacific Institute for Studies in Dev. Environment & Security Stockholm Env. Institute, Oxford Univ. Press, 473p.
 9. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R).
 10. Heywood, V.H. & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge Uni. Press 1140p.
 11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p.
 12. Mackinney, M.L. & Schoch, RM 1996, Environmental Science systems & solutions, Web enhanced edition. 639p.
 13. Mhaskar A.K., Mayyer Hazardous, Tekchno-Science Publications (TB).
 14. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB).
 15. Odum, E.P. 1971, Fundamentals of Ecology. W.B. Saunders Co. USA, 574p.
 16. Rao M.N. & Datta, A.K. 1987 Waste Water Treatment. Oxford & TBH Publ. Co. Pvt. Ltd. 345p.
 17. Sharma, B.K. 2001, Environmental Chemistry, Goal Publ. House, Meerut.
 18. Survey of the Environment, The Hindu (M).
 19. Townsend C., Harper J. and Michael Begon. Essentials of Ecology, Blackwell Science (TB).
 20. Trivedi R.K., Handbook of Environmental Laws, Rules, Guidelines, Comliances and Standards, Vol. I and II Enviro Media (R).
 21. Tridevi R.K. and P.K. Goal, Introduction to air pollution, Techno Science Publications (TR).
 22. Wagner K.D., 1998, Environmental Management, W.B. Saunders co. Philadelphia, USA 499p.
 23. A text book environmental education G.V.S. Publishers by Dr. J.P. Yadav.
- (M) Magazine
(R) Reference
(TB) Textbook

The scheme of the paper will be under :

The subject of Environmental Studies will be included as a qualigying paper in all UG Courses (including professional courses also) and the students will be required to qualify the same otherwise the final result will not be declared and degree will not be awarded.
Annual System : The duration of the course will be 50 lectures. The examination will be conducted alongwith with the annual examinations.
Wherever semester system prevails the environmental Course of 50 lectures will be conducted in the second semester and the examination shall be conducted at the end of the second semester.

Exam. Pattern : In case of awarding the marks, the question paper will carry 100 marks. Theory : 75 marks, Practical : 25 marks. The structure of the question paper will be :

Part- A : Short Answer Pattern : 25 marks

Part- B : Essay Type with inbuilt choice : 50 marks

Part-C : Field Work (Practical) : 25 marks

Instructions for Examiners :

Part- A : Question No. 1 is compulsory and will contain ten shortanswer type question of 2.5 marks each covering the entire syllabus.

Part-B : Eight essay type questions (with inbuilt choice) will be set from the entire syllabus and the candidate will be required to answer any four of them. Each essay type question will be of 12.5 marks.

The examination of the regular students will be conducted by the concerned college/Institute and the examinations of Private/Distance Education mode students will be conducted by the University. Each student will be required to score minimum 35% marks separately in theory and practical. The marks in this qualifying paper will not be included in determining the percentage of marks obtained for the award of degree. However, these marks will be shown in the detailed marks certificate of the students.

EE-217 F

**Digital and Analog Communication
(CSE, IT)**

L T P

3 1 -

Class Work: 50

Exam: 100

Total: 150

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: Communication system components:

Introduction to Communication: Definition & means of communications; Digital and analog signals: sign waves, square waves; Properties of signals: amplitude, frequency, phase; Theoretical basis for data communication: Fourier analysis: Fourier series and Fourier Transform (property, ESD, PSD and Raleigh) effect of limited bandwidth on digital signal.

Section B: Data Transmission System:

Physical connections: modulation, amplitude-, frequency-, phase- modulation; Data encoding: binary encoding (NRZ), Manchester encoding, differential Manchester encoding. Transmission Media: Twisted pair-, co-axial-, fiber optic-cables, wireless media
Transmission impairments: attenuation, limited bandwidth of the channels, delay distortion, noise, data rate of the channels (Nyquist theorem, Shannon limit). Physical layer interfaces:
RS 232, X.21

Section C: Standards in data communications:

Communication modes: simplex, half duplex, full duplex; Transmission modes: serial-, parallel-transmission; Synchronizations: Asynchronous-, synchronous-transmission; Type of services: connection oriented-, connectionless-services; Flow control: unrestricted simplex protocol, simplex stop- and -wait protocol, sliding window protocol; Switching systems: circuit switching; picketing switching: data gram , virtual circuits, permanent virtual circuits. Telephone Systems: PSTN, ISDN, asynchronous digital subscriber line.
Multiplexing: frequency division-, time-, wave- division multiplexing

Section D: Security in data communications:

Transmission errors: feedback-, forward-error control approaches; Error detection; Parity check, block sum check, frame check sequences; Error correction: hamming codes, cyclic redundancy check; Data encryption: secret key cryptography, public key cryptograph; Data compression: run length encoding, Huffman encoding.

Text Book:

- x Data Communications, Computer Networks and Open Systems Halsall Fred, (4th editon)
2000, Addison Wesley, Low Price edition

Reference Books:

- x Business Data Communications, Fitzgerald Jerry, 7th Ed. New York, 2001, JW&S,
- x Communication Systems, 4th Ed., by A. Bruce Carlson, Paul B. Crilly, Janet C. Rutledge, 2002, TMH.
- x Data Communications, Computer Networks and Open Systems, Halsall Fred, 1996, AW.
- x Digital Communications, J.G. Proakiss, 4th Ed., MGH
- x Satellite Communication, Pratt, John Wiley
- x Data & Computer Communications, W.Stallings PHI
- x Digital & Data Communication systems, Roden 1992, PHI,
- x Introduction to Digital & Data Communications, Miller Jaico Pub.
- x Data Communications and Networking, Behrouz A. Forouzan, 2003, 2nd Edition, T.M.H

EE-204-F

DIGITAL ELECTRONICS

L T P
3 1 0

Class Work marks : 50
Theory marks : 100
Total marks : 150
Duration of Exam : 3 hr

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

Digital system and binary numbers: Signed binary numbers, binary codes, cyclic codes, error detecting and correcting codes, hamming codes.

Gate-level minimization: The K-map method up to five variable, don't care conditions, POS simplification, NAND and NOR implementation, Quine Mc-Clusky method (Tabular method)

SECTION-B

Combinational Logic: Combinational circuits, analysis procedure, design procedure, binary adder-subtractor, decimal adder, binary multiplier, magnitude comparator, decoders, encoders, multiplexers ,demultiplexers

SECTION –C

Synchronous Sequential logic: Sequential circuits, storage elements: latches, flip flops, analysis of clocked sequential circuits, state reduction and assignments, design procedure. Registers and counters: Shift registers, ripple counter, synchronous counter, other counters

SECTION- D

Memory and programmable logic: RAM, ROM, PLA, PAL. Design at the register transfer level: ASMs, design example, design with multiplexers. Asynchronous sequential logic: Analysis procedure, circuit with latches, design procedure, reduction of state and flow table, race Free State assignment, hazards

Text Book:

- x M. Morris Mano and M. D. Ciletti, "Digital Design", 4th Edition, Pearson Education
- x Pedroni - Digital Electronics & Design, Elsevier
- x R.P. Jain , "Modern digital electronics" , 3rd edition , 12th reprint TMH Publication, 2007.
- x Digital Design and computer organization: Nasib Singh Gill & J. B. Dixit

REFERENCE BOOKS :

- x Grout - Digital Design using FPGA'S & CPLD's, Elsevier
- x F. Vahid: Digital Design: Wiley Student Edition, 2006
- x J. F. Wakerly, *Digital Design Principles and Practices*, Fourth Edition, Prentice-Hall, 2005.
- x R. L. Tokheim, *Digital electronics, Principles and applications*, 6th Edition, Tata McGraw Hill Edition, 2003

CSE-301-F

Principles of Operating Systems

L T P

Class Work : 50 Marks

3 1 -

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 Thread's.

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

Theory : 100 Marks

3 1 -

Class work : 50 Marks

Total : 150 Marks

Duration of Exam : 3 Hours

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

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.

EE-224-F

DIGITAL ELECTRONICS LAB

L T P
0 0 3

Class Work marks : 50

Theory marks : 50

Total marks : 100

Objective: To understand the digital logic and create various systems by using these logics.

1. Introduction to digital electronics lab- nomenclature of digital ICs, specifications, study of the data sheet, concept of V_{cc} and ground, verification of the truth tables of logic gates using TTL ICs.
2. Implementation of the given Boolean function using logic gates in both SOP and POS forms.
3. Verification of state tables of RS, JK, T and D flip-flops using NAND & NOR gates.
4. Implementation and verification of Decoder/De-multiplexer and Encoder using logic gates.
5. Implementation of 4x1 multiplexer using logic gates.
6. Implementation of 4-bit parallel adder using 7483 IC.
7. Design, and verify the 4-bit synchronous counter.
8. Design, and verify the 4-bit asynchronous counter.
 9. Static and Dynamic Characteristic of NAND and Schmitt-NAND gate(both TTL and MOS)
 - 10 Study of Arithmetic Logic Unit.
 11. Mini Project.

NOTE : Ten experiments are to be performed, out of which at least seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & setup by the concerned institution as per the scope of the syllabus.

Microprocessors and Interfacing Lab EE-329-F

L T P Class Work : 25Marks

0 0 2 Exams : 25Marks

Total : 50 Marks

Duration of Exam : 3 Hrs

List of Experiments:

Study of 8085 Microprocessor kit.

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)

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.

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

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

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

Study of 8086 microprocessor kit

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

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

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

Write a program using 8086 and verify for:

- a. Finding the largest number from an array.
- b. Finding the smallest number from an array.

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

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

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

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

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.

Operating System lab CSE-313-F

L T P
- - 2

Class Work	:	25	Marks
Exam:		25	Marks
Total	:		3 Hrs.
Duration of Exam		50	Marks

Study of WINDOWS 2000 Operating System.

Administration of WINDOWS 2000 (including DNS,LD AP, 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.

IT-202 F

Object Oriented Programming Using C++

L T P
3 1 -

Class Work: 50
Exam: 100
Total: 150
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 C++ and Object oriented Concepts

C++ Standard Library, Basics of a Typical C++ Environment, Pre-processors Directives, Illustrative Simple C++ Programs. Header Files and Namespaces, library files.
Introduction to Objects and Object Oriented Programming, Encapsulation (Information Hiding), Access Modifiers: Controlling access to a class, method, or variable (public, protected, private, package), Other Modifiers, Polymorphism: Overloading,, Inheritance, Overriding Methods, Abstract Classes, Reusability, Class's Behaviors.

Section B: Classes and Data Abstraction:

Introduction, Structure Definitions, Accessing Members of Structures, Class Scope and Accessing Class Members, Separating Interface from Implementation, Controlling Access Function And Utility Functions, Initializing Class
Objects: Constructors, Using Default Arguments With Constructors, Using Destructors, Classes : Const(Constant) Object And Const Member Functions, Object as Member of Classes, Friend Function and Friend Classes, Using This Pointer, Dynamic Memory Allocation with New and Delete, Static Class Members, Container Classes And Integrators, Proxy Classes, Function overloading.

Section C: Operator Overloading , Inheritance, and Virtual Functions and Polymorphism:

Fundamentals of Operator Overloading, Restrictions On Operators Overloading, Operator Functions as Class Members vs. as Friend Functions, Overloading, <<, >> Overloading Unary Operators, Overloading Binary Operators.
Introduction to Inheritance, Base Classes And Derived Classes, Protected Members, Casting Base-Class Pointers to Derived- Class Pointers, Using Member Functions, Overriding Base – Class Members in a Derived Class, Public, Protected and Private Inheritance, Using Constructors and Destructors in derived Classes, Implicit Derived –Class Object To Base- Class Object Conversion, Composition Vs. Inheritance.
Introduction to Virtual Functions, Abstract Base Classes And Concrete Classes,
Polymorphism, New Classes And Dynamic Binding, Virtual Destructors, Polymorphism, Dynamic Binding.

Section D: Files and I/O Streams and Templates and Exception Handling:

Files and Streams, Creating a Sequential Access File, Reading Data From A Sequential Access File, Updating Sequential Access Files, Random Access Files, Creating A Random Access File, Writing Data Randomly To a Random Access File, Reading Data Sequentially from a Random Access File. Stream Input/Output Classes and Objects, Stream Output, Stream Input, Unformatted I/O (with read and write), Stream Manipulators, Stream Format States, Stream Error States.

Function Templates, Overloading Template Functions, Class Template, Class Templates and Non-Type Parameters, Templates and Inheritance, Templates and Friends, Templates and Static Members.

Introduction, Basics of C++ Exception Handling: Try Throw, Catch, Throwing an Exception, Catching an Exception, Rethrowing an Exception, Exception specifications, Processing Unexpected Exceptions, Stack Unwinding, Constructors, Destructors and Exception Handling, Exceptions and Inheritance.

Text Books:

- x C++ How to Program by H M Deitel and P J Deitel, 1998, Prentice Hall
- x Object Oriented Programming in Turbo C++ by Robert Lafore ,1994, The WAITE Group Press.
- x Programming with C++ By D Ravichandran, 2003, T.M.H

Reference books:

- x Object oriented Programming with C++ by E Balagurusamy, 2001, Tata McGraw-Hill
- x Computing Concepts with C++ Essentials by Horstmann, 2003, John Wiley,
- x The Complete Reference in C++ By Herbert Schildt, 2002, TMH.

CSE- 210 F Computer Architecture & Organization

L T P
3 1 -

Class Work: 50
Exam: 100
Total: 150
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:

Boolean algebra and Logic gates, Combinational logic blocks(Adders, Multiplexers, Encoders, de-coder), Sequential logic blocks(Latches, Flip-Flops, Registers, Counters) Store program control concept, Flynn’s classification of computers (SISD, MISD, MIMD); Multilevel viewpoint of a machine: digital logic, micro architecture, ISA, operating systems, high level language; structured organization; CPU, caches, main memory, secondary memory units & I/O; Performance metrics; MIPS, MFLOPS.

Section B: Instruction Set Architecture:

Instruction set based classification of processors (RISC, CISC, and their comparison); addressing modes: register, immediate, direct, indirect, indexed; Operations in the instruction set; Arithmetic and Logical, Data Transfer, Control Flow; Instruction set formats (fixed, variable, hybrid); Language of the machine: 8086 ; simulation using MSAM.

Section C: Basic non pipelined CPU Architecture and Memory Hierarchy & I/O Techniques

CPU Architecture types (accumulator, register, stack, memory/ register) detailed data path of a typical register based CPU, Fetch-Decode-Execute cycle (typically 3 to 5 stage); microinstruction sequencing, implementation of control unit, Enhancing performance with pipelining.

The need for a memory hierarchy (Locality of reference principle, Memory hierarchy in practice: Cache, main memory and secondary memory, Memory parameters: access/ cycle time, cost per bit); Main memory (Semiconductor RAM & ROM organization, memory expansion, Static & dynamic memory types); Cache memory (Associative & direct mapped cache organizations).

Section D: Introduction to Parallelism and Computer Organization [80x86]:

Goals of parallelism (Exploitation of concurrency, throughput enhancement); Amdahl’s law; Instruction level parallelism (pipelining, super scaling –basic features); Processor level parallelism (Multiprocessor systems overview).

Instruction codes, computer register, computer instructions, timing and control, instruction cycle, type of instructions, memory reference, register reference. I/O reference, Basics of

gic Design, accumulator logic, Control memory, address sequencing, micro-instruction formats, micro-program sequencer, Stack Organization, Instruction Formats, Types of interrupts; Memory Hierarchy.

Text Books:

- x Computer Organization and Design, 2nd Ed., by David A. Patterson and John L. Hennessy, Morgan 1997, Kauffmann.
- x Computer Architecture and Organization, 3rd Edi, by John P. Hayes, 1998, TMH.

Reference Books:

- x Operating Systems Internals and Design Principles by William Stallings, 4th edition, 2001, Prentice-Hall Upper Saddle River, New Jersey
- x Computer Organization, 5th Edi, by Carl Hamacher, Zvonko Vranesic, 2002, Safwat Zaky.
- x Structured Computer Organisation by A.S. Tanenbaum, 4th edition, Prentice-Hall of India, 1999, Eastern Economic Edition.
- x Computer Organisation & Architecture: Designing for performance by W. Stallings, 4th edition, 1996, Prentice-Hall International edition.
- x Computer System Architecture by M. Mano, 2001, Prentice-Hall.
- x Computer Architecture- Nicholas Carter, 2002, T.M.H.

Computer Networks IT-305-F

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

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,.
- Computer Networks - A System Approach, Larry L. Peterson & Bruce S. Davie, 2nd Edition
- Computer Networking - ED Tittel , 2002, T.M.H.

Systems Programming & System Administration IT-303-F

L T P
Marks
3 1 -

Class Work : 50

Exam: 100Marks

Total: 150Marks

Duration of Exam : 3Hs

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 Brian 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:

Unix- Concept and applications by Sumitabha Das, 2002, T.M. .H

performed from the above list or designed & set by the concerned institution as per the scope of the syllabus.

IT-206 F**C ++ Programming Lab.**

L T P
- - 2

Class Work: 25
Exam: 25
Total: 50
Duration of Exam: 3 Hrs.

- Q1. Raising a number n to a power p is the same as multiplying n by itself p times. Write a function called `power ()` that takes a double value for n and an int value for p , and returns the result as double value. Use a default argument of 2 for p , so that if this argument is omitted, the number will be squared. Write a `main ()` function that gets values from the user to test this function.
- Q2. A point on the two dimensional plane can be represented by two numbers: an X coordinate and a Y coordinate. For example, (4,5) represents a point 4 units to the right of the origin along the X axis and 5 units up the Y axis. The sum of two points can be defined as a new point whose X coordinate is the sum of the X coordinates of the points and whose Y coordinate is the sum of their Y coordinates.

Write a program that uses a structure called `point` to model a point. Define three points, and have the user input values to two of them. Then set the third point equal to the sum of the other two, and display the value of the new point. Interaction with the program might look like this:

```
Enter coordinates for P1: 3 4
Enter coordinates for P2: 5 7
Coordinates of P1 + P2 are : 8,11
```

- Q 3. Create the equivalent of a four function calculator. The program should request the user to enter a number, an operator, and another number. It should then carry out the specified arithmetical operation: adding, subtracting, multiplying, or dividing the two numbers. (It should use a `switch` statement to select the operation). Finally it should display the result. When it finishes the calculation, the program should ask if the user wants to do another calculation. The response can be 'Y' or 'N'. Some sample interaction with the program might look like this.

```
Enter first number, operator, second number: 10/ 3
Answer = 3.333333
```

Do another (Y/ N)? Y

```
Enter first number, operator, second number 12 + 100
```

```
Answer = 112
```

Do another (Y/ N) ? N

- Q4. A phone number, such as (212) 767-8900, can be thought of as having three parts: the area code (212), the exchange (767) and the number (8900). Write a program that uses a structure to store these three parts of a phone number separately. Call the structure `phone`. Create two structure variables of type `phone`. Initialize one, and have the user input a number for the other one. Then display both numbers. The interchange might look like this:

```
Enter your area code, exchange, and number: 415 555 1212
```

```
My number is (212) 767-8900
```

```
Your number is (415) 555-1212
```


Q 5. Create two classes DM and DB which store the value of distances. DM stores distances in metres and centimeters and DB in feet and inches. Write a program that can read values for the class objects and add one object of DM with another object of DB.

Use a friend function to carry out the addition operation. The object that stores the results may be a DM object or DB object, depending on the units in which the results are required.

The display should be in the format of feet and inches or metres and centimetres depending on the object on display.

Q 6. Create a class rational which represents a numerical value by two double values- NUMERATOR & DENOMINATOR. Include the following public member Functions:

- x constructor with no arguments (default).
- x constructor with two arguments.
- x void reduce() that reduces the rational number by eliminating the highest common factor between the numerator and denominator.
- x Overload + operator to add two rational number.
- x Overload >> operator to enable input through cin.
- x Overload << operator to enable output through cout.
- x Write a main () to test all the functions in the class.

Q 7. Consider the following class definition

```
class father {
    protected : int age;
public;
    father (int x) {age = x;}
    virtual void iam ( )
        { cout << "I AM THE FATHER, my age is : " << age << endl; }
};
```

Derive the two classes son and daughter from the above class and for each, define iam () to write our similar but appropriate messages. You should also define suitable constructors for these classes. Now, write a main () that creates objects of the three classes and then calls iam () for them. Declare pointer to father. Successively, assign addresses of objects of the two derived classes to this pointer and in each case, call iam () through the pointer to demonstrate polymorphism in action.

Q 8. Write a program that creates a binary file by reading the data for the students from the terminal.

The data of each student consist of roll no., name (a string of 30 or lesser no. of characters) and marks.

Q9. A hospital wants to create a database regarding its indoor patients. The information to store include

- a) Name of the patient
- b) Date of admission
- c) Disease
- d) Date of discharge

Create a structure to store the date (year, month and date as its members). Create a base class to

store the above information. The member function should include functions to enter information and display a list of all the patients in the database. Create a derived class to store the age of the patients. List the information about all the to store the age of the patients. List the information about all the pediatric patients (less than twelve years in age).

Q 10. Make a class **Employee** with a name and salary. Make a class **Manager** inherit from **Employee**. Add an instance variable, named department, of type string. Supply a method to **toString** that prints the manager's name, department and salary. Make a class **Executive** inherit from **Manager**. Supply a method to **String** that prints the string "**Executive**" followed by the information stored in the **Manager** superclass object. Supply a test program that tests these classes and methods.

Q11. Imagine a tollbooth with a class called toll Booth. The two data items are a type unsigned int to hold the total number of cars, and a type double to hold the total amount of money collected. A constructor initializes both these to 0. A member function called `payingCar()` increments the car total and adds 0.50 to the cash total. Another function, called `nopayCar()`, increments the car total but adds nothing to the cash total. Finally, a member function called `display()` displays the two totals.

Include a program to test this class. This program should allow the user to push one key to count a paying car, and another to count a nonpaying car. Pushing the ESC key should cause the program to print out the total cars and total cash and then exit.

Q12. Write a function called `reversit()` that reverses a string (an array of char). Use a for loop that swaps the first and last characters, then the second and next to last characters and so on. The string should be passed to `reversit()` as an argument.

Write a program to exercise `reversit()`. The program should get a string from the user, call `reversit()`, and print out the result. Use an input method that allows embedded blanks. Test the program with Napoleon's famous phrase, "Able was I ere I saw Elba".

Q13. Create some objects of the string class, and put them in a Deque-some at the head of the Deque and some at the tail. Display the contents of the Deque using the `forEach()` function and a user written display function. Then search the Deque for a particular string, using the `firstThat()` function and display any strings that match. Finally remove all the items from the Deque using the `getLeft()` function and display each item. Notice the order in which the items are displayed: Using `getLeft()`, those inserted on the left (head) of the Deque are removed in "last in first out" order while those put on the right side are removed in "first in first out" order. The opposite would be true if `getRight()` were used.

Q 14. Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called triangle and rectangle from the base shape. Add to the base

class, a member function `get_data ()` to initialize base class data members and another member function `display_area ()` to compute and display the area of figures. Make `display_area ()` as a virtual function and redefine this function in the derived classes to suit their requirements.

Using these three classes, design a program that will accept dimensions of a triangle or a rectangle interactively and display the area.

Remember the two values given as input will be treated as lengths of two sides in the case of rectangles and as base and height in the case of triangles and used as follows:

Area of rectangle = $x * y$
Area of triangle = $\frac{1}{2} * x * y$

Computer Network Lab.

CSE-310-FL T P Class Work : 25Maks

- - 3 Exam : 25Maks

Total : 50Maks

Duration of Exam : 3 Hrs

This course provides students with hands on training regarding the design, troubleshooting, modeling and evaluation of computer networks. In this course, students are going to experiment in a real test-bed networking environment, and learn about network design and troubleshooting topics and tools such as: network addressing, Address Resolution Protocol (ARP), basic troubleshooting tools (e.g. ping, ICMP), IP routing (e.g. RIP), route discovery (e.g. traceroute), TCP and UDP, IP fragmentation and many others. Student will also be introduced to the network modeling and simulation, and they will have the opportunity to build some simple networking models using the tool and perform simulations that will help them evaluate their design approaches and expected network performance.

GP-302- F

GENERAL FITNESS FOR THE PROFESSION

L T P
- - 2

Class Work : 50 Marks

- x Quiz & Aptitude
- x Comprehension,
- x Communication for specifics.
- x Lets Speak
- x Composition skills- Formal letter writing based on the trends in practice in corporate culture.
- x Training on etiquettes & manners should be carried further and be observed during the general classes, if required even the faculty should imparted some training on the same.

CSE-303-F Computer Graphics

L T P Class Work : 50 Marks

3 1 - Exam : 100Marks

Total : 150Marks

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 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

Multimedia Technologies IT-204-F

: 50 Marks

: 100 Marks

: 150 Marks

L T P Class Work

3 1 - Exam

Total

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

Basics of Multimedia Technology: Computers, communication and entertainment; multimedia an introduction; framework for multimedia systems; multimedia devices; CD- Audio, CD-ROM, CD-I, presentation devices and the user interface; multimedia presentation and authoring; professional development tools; LANs and multimedia; internet, World Wide Web & multimedia distribution network-ATM & ADSL; multimedia servers & databases; vector graphics; 3D graphics programs; animation techniques; shading; anti aliasing; morphing; video on demand.

Section-B

Image Compression & Standards: Making still images; editing and capturing images; scanning images; computer color models; color palettes; vector drawing; 3D drawing and rendering; JPEG-objectives and architecture; JPEG-DCT encoding and quantization, JPEG statistical coding, JPEG predictive lossless coding; JPEG performance; overview of other image file formats as GIF, TIFF, BMP, PNG etc.

Section-C

Unit-3: Audio & Video: Digital representation of sound; time domain sampled representation; method of encoding the analog signals; subband coding; fourier method; transmission of digital sound; digital audio signal processing; stereophonic & quadraphonic signal processing; editing sampled sound; MPEG Audio; audio compression & decompression; brief survey of speech recognition and generation; audio synthesis; musical instrument digital interface; digital video and image compression; MPEG motion video compression standard; DVI technology; time base media representation and delivery.

Section-D

Virtual Reality: Applications of multimedia, intelligent multimedia system, desktop virtual reality, VR operating system, virtual environment displays and orientation making; visually coupled system requirements; intelligent VR software systems. Applications of environment in various fields.

Text Books:

An introduction, Villamil & Molina, Multimedia Mc Milan, 1997

multimedia: Sound & Video, Lozano, 1997, PHI, (Que)

Reference Books:

Multimedia: Production, planning and delivery, Villamil & Molina,Que, 1997

Multimedia on the PC, Sinclair,BPB

C Multimedia: Making it work, Tay Vaughan, fifth edition, 1994, TMH.

Multimedia in Action by James E Shuman, 1997, Wadsworth Publ.,

Multimedia in Practice by Jeff coate Judith, 1995,PHI.

Multimedia Systems by Koegel, AWL

Multimedia Making it Work by Vaughan, etl.

Multimedia Systems by John .F. Koegel, 2001, Buford.

Multimedia Communications by Halsall & Fred, 2001, AW.

CSE-305-F Theory of Automata & Computation

L T P Class Work : 50 Marks

3 1 - 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

Finite Automata and Regular Expressions: Finite State Systems, Basic Definitions Non-Deterministic finite automata (NFA), Deterministic finite automata (DFA), Equivalence of DFA and NFA Conversion of NFA to DFA Finite automata with E-moves, Regular Expressions, Equivalence of finite automata and Regular Expressions, Regular expression conversion and vice versa.

Introduction to Machines: Concept of basic Machine, Properties and limitations of FSM. Moore and mealy Machines, Equivalence of Moore and Mealy machines, state and prove Arden's Method.

Section-B

Properties of Regular Sets: The Pumping Lemma for Regular Sets, Applications of the pumping lemma, Closure properties of regular sets, Myhill-Nerode Theorem and minimization of finite Automata, Minimization Algorithm.

Grammars: Definition, Context free and Context sensitive grammar, Ambiguity regular grammar, Reduced forms, Removal of useless Symbols, unit production and null production Chomsky Normal Form (CNF), Griebach Normal Form (GNF).

Section-C

Pushdown Automata: Introduction to Pushdown Machines, Application of Pushdown Machines

Turing Machines: Deterministic and Non-Deterministic Turing Machines, Design of T.M, Halting problem of T.M., PCP Problem.

Section-D

Chomsky Hierarchies: Chomsky hierarchies of grammars, Unrestricted grammars, Context sensitive languages, Relation between languages of classes.

Computability: Basic concepts, Primitive Recursive Functions.

Text Book:

□ Introduction to automata theory, language & computations- Hopcroft & O.D.Ullman, R Mothwani, 2001, AW

Reference Books:

Theory of Computer Sc.(Automata, Languages and computation) :K.L.P.Mishra & N.Chandrasekaran, 2000, PHI.

Introduction to formal Languages & Automata-Peter Linz, 2001, Narosa Publ..

Fundamentals of the Theory of Computation- Principles and Practice by RamondGreenlaw and H. James Hoover, 1998, Harcourt India Pvt. Ltd..

Elements of theory of Computation by H.R. Lewis & C.H. Papaditriou, 1998, PHI.

Introduction to languages and the Theory of Computation by John C. Martin 2003,

WEB DEVELOPMENT

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

CSE-307-F

L T P

3 1 -

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/JavaScript)

Section-D

Other dynamic content technologies: introduction to ASP & JSP, Delivering multimedia over web pages, The VRML idea, The Java phenomenon-applets and servlets, 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 Schnitzenbaumer & ted Wugofski, 2000, WROX press (Indian Shroff Publ. SPD) 1st 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^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^o Reilly.

Doug Tidwell, James Snell, Pavel Kulchenko; Programming Web services, O^o Reilly.

Web Development & Core JAVA Lab.CSE-311-F

L T P Class Work : 25 Marks

- - 2 **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

Computer Graphics Lab.CSE-309-F

L T P Class Work : 25 Marks

- - 2 **Exam** : 25 Marks

Total : 50 Marks

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

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

Write a program for circle drawing as Raster Graphics Display.

Write a program for polygon filling as Raster Graphics Display

Write a program for line clipping.

Write a program for polygon clipping.

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

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

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.

Multimedia Technologies Lab.II-208-F

L T P Class Work : 25Marks

- - 2 **Exam** : 25Marks

Total : 50 Marks

Duration of Exam : 3 Hrs.

Write a program to justify a text entered by the user on both the left and right hand side. For example, the text “ An architect may have a graphics program to draw an entire building but be interested in only ground floor”, can be justified in 30 columns as shown below. An architect may have a Graphics programs draw an Entric building but be interested in only ground floor.

Study the notes of a piano and stimulate them using the key board and store them in a file.

Write a program to read a paragraph and store it to a file name suggested by the author.

Devise a routine to produce the animation effect of a square transforming to a triangle and then to a circle.

Write a program to show a bitmap image on your computer screen.

Create a web page for a clothing company which contains all the details of that company and at-least five links to other web pages.

Write a program by which we can split mpeg video into smaller pieces for the purpose of sending it over the web or by small capacity floppy diskettes and then joining them at the destination.

Write a program to simulate the game of pool table.

Write a program to simulate the game Mine Sweeper.

10. Write a program to play “wave” or “midi” format sound files.

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

DIGITAL SYSTEM DESIGN EE-310-F

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

Introduction: Introduction to Computer-aided design tools for digital systems. Hardware description languages; introduction to VHDL, data objects, classes and data types, Operators, Overloading, logical operators. Types of delays Entity and Architecture declaration. Introduction to behavioural, dataflow and structural models.

Section-B

Vhdl Statements: Assignment statements, sequential statements and process, conditional statements, case statement Array and loops, resolution functions, Packages and Libraries, concurrent statements.

Subprograms: Application of Functions and Procedures, Structural Modelling, component declaration, structural layout and generics.

Section-C

Combinational Circuit Design: VHDL Models and Simulation of combinational circuits such as Multiplexers, Demultiplexers, encoders, decoders, code converters, comparators, implementation of Boolean functions etc.

Sequential Circuits Design : VHDL Models and Simulation of Sequential Circuits Shift Registers, Counters etc.

Section-D

Design Of Microcomputer : Basic components of a computer, specifications, architecture of a simple microcomputer system, implementation of a simple microcomputer system using VHDL

Design With Cplds And Fpgas : Programmable logic devices : ROM, PLAs, PALs, GAL, PEEL, CPLDs and FPGA. Design implementation using CPLDs and FPGAs

Reference Books:

IEEE Standard VHDL Language Reference Manual (1993).

Digital Design and Modelling with VHDL and Synthesis : KC Chang; IEEE Computer Society Press.

"A VHDL Primer" : Bhasker; Prentice Hall 1995.

"Digital System Design using VHDL" : Charles. H.Roth ; PWS (1998).

"VHDL-Analysis & Modelling of Digital Systems" : Navabi Z; McGraw Hill.

VHDL-IV Edition :Perry; TMH (2002)

"Introduction to Digital Systems" : Ercegovac. Lang & Moreno; John Wiley (1999).

Fundamentals of Digital Logic with VHDL Design : Brown and Vranesic; TMH (2000)

Modern Digital Electronics- III Edition: R.P Jain; TMH (2003).

Principles of Software Engineering CSE-302-F

L T P Class Work : 50 Marks

3 1 - 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: 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.

- Fundamentals of software Engineering, Rajib Mall, PHI Software Engineering by Ian Sommerville, Pearson Edu, 5th 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,

Analysis and Design of Algorithms CSE-306-F

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

Brief Review of Graphs, Sets and disjoint sets, union, sorting and searching algorithms and their analysis in terms of space and time complexity.

Divide and Conquer: General method, binary search, merge sort, quick sort, selection sort, Strassen's matrix multiplication algorithms and analysis of algorithms for these problems.

Section-B

Greedy Method: General method, knapsack problem, job sequencing with dead lines, minimum spanning trees, single source paths and analysis of these problems. **Dynamic Programming:** General method, optimal binary search trees, 0/1 knapsack, the traveling salesperson problem.

Section-C

Unit-5: Back Tracking: General method, 8 queen's problem, graph colouring, Hamiltonian cycles, analysis of these problems. **Unit-6: Branch and Bound:** Method, 0/1 knapsack and traveling salesperson problem, efficiency considerations. Techniques for algebraic problems, some lower bounds on parallel computations.

Section-D

NP Hard and NP Complete Problems: Basic concepts, Cook's theorem, NP hard graph and NP scheduling problems some simplified NP hard problems.

Text Books:

Fundamental of Computer algorithms, Ellis Horowitz and Sartaj Sahni, 1978, Galgotia Publ.,
Introduction To Algorithms, Thomas H Cormen, Charles E Leiserson And Ronald L Rivest: 1990, TMH

Reference Books:

- The Design and Analysis of Computer Algorithm, Aho A.V. Hopcroft J.E., 1974, Addison Wesley.
- Algorithms-The Construction, Proof and Analysis of Programs, Berlion, P.Bizard, P., 1986. Johan Wiley & Sons, Writing Efficient Programs, Bentley, J.L., PHI
- Introduction to Design and Analysis of Algorithm, Goodman, S.E. & Hedetniemi, 1997, MGH.
- Introduction to Computers Science- An algorithms approach , Jean Paul Trembley, Richard B.Bunt, 2002, T.M.H.
- Fundamentals of Algorithms: The Art of Computer Programming Voll, Knuth, D.E.: 1985, Naresh Publ.

Intelligent Systems CSE-304-F

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

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.
- Artificial intelligence, Patrick Henry Winston:, 1992, Addition Wesley 3rd Ed.,

DIGITAL SYSTEM DESIGN LAB

EE-330-FL T P CLASS WORK : 25Marks

0 0 2 EXAM : 25Marks

TOTAL : 50Marks

DURATION OF EXAM : 3 HRS List Of Experiments:

Design all gates using VHDL.

Write VHDL programs for the following circuits, check the wave forms and the hardware generated

a. half adder

b. full adder

3. Write VHDL programs for the following circuits, check the wave forms and the hardware generated

a. multiplexer

b. demultiplexer

4. Write VHDL programs for the following circuits, check the wave forms and the hardware generated

a. decoder

b. encoder

5. Write a VHDL program for a comparator and check the wave forms and the hardware generated

6 Write a VHDL program for a code converter and check the wave forms and the hardware generated

Write a VHDL program for a FLIP-FLOP and check the wave forms and the hardware generated

Write a VHDL program for a counter and check the wave forms and the hardware generated

Write VHDL programs for the following circuits, check the wave forms and the hardware generated

a. register

b. shift register

10. Implement any three (given above) on FPGA/CPLD kit

Note :

Ten experiments are to be performed out of which at least 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.

Intelligent System Lab. CSE-308-F

L T P
- - 2

Class Work : 25 Marks

Exam : 25 Marks

Total : 50 Marks

Duration of Exam : 3 Hrs.

- 1 Study of PROLOG.
 2. Write the following programs using PROLOG.
 3. Write a program to solve 8 queens problem.
Solve any problem using depth first search.
Solve any problem using best first search.
Solve 8-puzzle problem using best first search
Solve Robot (traversal) problem using means End Analysis.
Solve traveling salesman problem.
- Note:
At least 5 to 10 more exercises to be given by the teacher concerned.

Visual Programming Lab.CSE-312-F

L T P Class Work : 25Maks

- - 3 Exam : 25Maks

Total : 50Maks

Duration of Exam : 3 Hrs Study of Visual Basic 6.0.NET and Visual C++ 6.0.NET.

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

Get familiar with essential classes in a typical (Document- view architecture) VC++ Program and their relationship with each other.

Create an SDI application in VC++ that adds a popup menu to your application which uses File drop down menu attached with the menu bar as the pop-up menu. The pop-up menu should be displayed on the right click of the mouse.

Create an SDI application in VC++ using which the user can draw atmost 20 rectangles in the client area. All the rectangles that are drawn should remain visible on the screen even if the window is refreshed. Rectangle should be drawn on the second click of the left mouse button out of the two consecutive clicks. If the user tries to draw more than 20 rectangles, a message should get displayed in the client area that " No more rectangles can be drawn"

Create an application in VC++ that shows how menu items can be grayed, disabled and appended at run time.

Write a program in VC++ to implement serialization of inbuilt and user defined objects.

Write a program in VC++ to create archive class object from CFile class that reads and stores a simple structure (record).

Make an Active X control in VC++ derived from a standard control.

Write a program in VB to implement a simple calculator.

Create a simple database in MS Access Database /Oracle and a simple database application in VB that shows database connectivity through DAO and ADO.

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

Write a program in VB to create a notepad.

Create a DLL in VB.

Bright students may do the following exercises:

Write a program in VC++ to implement a simple calculator.

Write a program in VC++ to create a static link library and a dynamic link library.

Create a simple database in MS Access Database and a simple database application in VC++ that shows database connectivity through ADO model.

Make an Active X control of your own using VB.

With the help of VB, create an object of excel application and implement any action on it.