

**Deenbandhu Chhotu Ram University of Science & Technology, Murthal
(Sonepat) SCHEME OF STUDIES & EXAMINATIONS B.Tech. 2nd YEAR
(SEMESTER -IV) COMPUTER SCIENCE AND ENGINEERING Credit Based
Scheme w.e.f. 2013-14**

Sr. No	Course No.	Course Title	Teaching Schedule			Marks of class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	practical			
1.	MGT 201B	ENGINEERING ECONOMICS (Common for all branches Except BT & BME) (Gr-B)	4	-	-	25	75	-	100	4	3
	GES201B	OR ENVIRONMENTAL STUDIES (Common for all branches) (Gr -A)	3	-	-	-	75*	-	75*	-	3
2.	CSE202B	DATABASE MANAGEMENT SYSTEMS (Common with IT)	3	1	-	25	75	-	100	4	3
3.	CSE 204B	OBJECT ORIENTED PROGRAMMING (common with ECE, IT, IC, EEE & AEI in V th Sem)	3	1	-	25	75	-	100	4	3
4.	CSE 206B	SYSTEM PROGRAMMING	3	1	-	25	75	-	100	4	3
5.	CSE208B	INFORMATION SYSTEM ANALYSIS AND DESIGN (Common with IT)	3	1	-	25	75	-	100	4	3
6.	CSE210B	COMPUTER ORGANIZATION AND ARCHITECTURE (common with ECE V th Sem)	3	1	-	25	75	-	100	4	3
7.	CSE 222B	DATABASE MANAGEMENT SYSTEMS LAB (Common with IT)	-	-	2	20	-	30	50	1	3
8.	CSE 224B	OBJECT ORIENTED PROGRAMMING LAB (common with ECE,IT, IC, EEE & AEI in V th Sem)	-	-	2	20	-	30	50	1	3
9.	CSE 226B	SYSTEM PROGRAMMING LAB	-	-	2	20	-	30	50	1	3
10.	GES 203B	ENVIRONMENTAL STUDIES FIELD WORK (Common for all branches) (Gr- A)	--	--	--	-	-	25*	25*	-	-
11.	GPCSE 202B	GENERAL PROFICIENCY AND ETHICS	1	-	-	-	-	75	75	2	3
Gr- B			20	5	6	210	450	165	825	29	
Gr-A			19	5	6	185	450	190	825	25	
Total											

Note:

- 0** Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency and Ethics Syllabus.
- 1** *The Environmental studies (GES-201B) & Environment Studies Field work (GES-203B) are compulsory & qualifying courses only.
- 2** The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- 3** Electronics gadgets including Cellular phones are not allowed in the examination.
- 4** Each students has to undergo Professional Training of at least 4 weeks from the industry, institute, research lab, training center etc. during summer vacation and its evaluation shall be carried out in the V semester.

- 5 All the branches are to be divided into Group-A and Group-B as per the suitability of the Institute/College so that there is equitable distribution of teaching load in odd and even semesters.**

GES 201B ENVIRONMENTAL STUDIES
B. Tech. Semester – III/IV (Common for all Branches)

L	T	P	Credit	Examination	: 75Marks
3	--	--	0	Total	: 75 Marks
				Duration of Examination	: 3 Hours

UNIT – I The Multidisciplinary nature of environmental studies, Definition, scope and importance.

Need for Public awareness

UNIT - II NATURAL RESOURCES:

Renewable and non-renewable resources:

Natural resources and associated problems.

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

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

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

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

Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources; case studies.

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.

UNIT- III 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:

0 Forest ecosystem, Grassland ecosystem, Desert ecosystem.

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

UNIT- IV BIODIVERSITY AND ITS CONSERVATIONS:

Introduction – Definition: Genetic, species and ecosystem diversity. Biogeographically 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.

UNIT - V ENVIRONMENTAL POLLUTION:

Definition, causes, effects and control, measures of:

Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal Pollution, Nuclear hazards
Solid waste management: Causes effects and control measures of urban and industrial wastes.
Role of an individual in prevention of pollution. Pollution case studies.
Disaster management: Floods, earthquake, cyclone and landslides.

UNIT - VI 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 Protection 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

UNIT - VII 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 Welfare. Role of Information Technology in Environment and human health. Case Studies.

REFERENCES:

- Agarwal, K.C. 2001, Environmental Biology, Nidi Pub. Ltd. Bikaner.
Bharucha, Franch, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad - 380013, India .
Brunner R.C. 1989, Hazardous Waste Incineration, Mc. Graw Hill Inc. 480p.
Clark R.S., Marine Pollution, Slanderson Press Oxford (TB).
Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Pub. House, Mumbai. 1195p.
De A.K., Environmental Chemistry, Wiley Eastern Ltd.
Down to Earth, Centre for Science and Environment ®.
Gleick, H.P., 1993. Water in Crisis, Pacific Institute for Studies in Dev., Environment & Security, Stockholm Env. Institute, Oxford Univ., Press 473p.
Hawkins R.E. Encyclopedia of Indian Natural History, Bomaby Natural History Society, Bombay (R).
Heywood, V.H. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.
Jadhav, H & Bhosale, V.M. 1995, Environmental Protection and Laws, Himalaya Pub. House, Delhi 284p.
Mckinney, M.L. & Schoch, RM 1996, Environmental Sciences Systems & Solutions, Web enhanced Edition 639p.
Mhaskar A.K., Mater Hazardous, Tekchno-Sciences Publications (TB).
Miller T.G. Jr. Environmental Science, Wadsoworth Publishing Co. (TB).
Odum, E.P. 1971, Fundamentals of Ecology, W.B. Saunders Co. USA, 574p.
Rao M.N. & Dutta, A.K. 1987, Waste Water Treatment. Oxford & IBH Publ. Co. Pvt. Ltd., 345p
Sharma, B.K., 2001, Environmental Chemistry, Goel Publ. House, Meerut.

Survey of the Environment, The Hindu (M).

Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Sciences (TB).
Trivedi, R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II Enviro Mdiea (R).
Trividi R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol I and II Enviro Media (R).
Trividi R.K. and P.K. Goel, Introduction to air pollution, Techno Sciences Pub. (TB).
Wagner K.D., 1998, Environmental Management, W.B. Saunders Co. Philadelphia, USA 499p.
A text bok environmental education G.V.S. Publishers by Dr. J.P. Yadav.

(M) Magazine (R) Reference (TB) Textbook

Note:

Examiner will set eight questions. Students will be required to attempt five Questions.

The awards of this paper shall not be counted in the award of the Degree/DMC.

CSE 202B DATABASE MANAGEMENT SYSTEMS
B. Tech. Semester - IV (Computer Science and Engg.) (Common with IT)

L	T	P	Credits	Class Work	25
3	1	--	4	Examination	: Marks
				Total	75Mark
				Duration of	: s
				Examination	100
					: Marks
					: 3 Hours

UNIT I

DBMS an overview, Advantages of DBMS, Network, Hierarchical and Relational Model, Levels of abstraction, Data Independence, Data Models, Instances and schemes, Data independence Structures of a DBMS, Application Programmers & Data Base administrators - their function, Transaction Management

Entity Relationship Model: Entities, Attributes and Entity Sets, Relation and Relationships sets, mapping and participation constraints, Aggregation, Specialization and Generalization, Features of E-R Model.

UNIT-II

Relational Model: Introduction to relational model, Integrity constraints over relations, Enforcing Data Integrity, Integrity Constraints, Relational Data, Logical Data Base Design, Reduction of E-R

Diagrams to relations, Introduction to views, Querying Relational Algebra and Relational Calculus, Operations on Relational Algebra, Operations on Relational Calculus, Tuple Relational Calculus, Domain Relational Calculus

UNIT-III

Database Design, Data Redundancy, Introduction to Schema Refinement, Functional Dependencies, Normal Forms-First , Second, Third, Boyce code, Fourth and Multivalued Dependencies

Structured Query Language:Basic SQL Queries, Nested Queries, Aggregate operator, Null Values, implementation of Various Relational Algebra operations, Embedded SQL

UNIT-IV

Transaction management: ACID Properties, Transaction states, Concurrency control: Concurrency Control -Overview, Concurrency control problems, Locks, Locking Protocols, Deadlocks, Serializability, Recovery System: Types of Failures, Recovery Techniques, ARIES

Text Books

Korth, Silberschatz, Database System Concepts , 4th Ed., TMH, 2000.

Date C. J., An Introduction to Database Systems , 7th Ed., Narosa Publishing, 2004

Reference Books

Elmasri Navathe, Fundamentals of Database Systems, 5th Edition Pearson Education

Vipin.C.Desai , An introduction to Database System , West Pub. Co

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be

required to attempt only 5 questions selecting at least one question from each unit.

CSE 204B OBJECT ORIENTED PROGRAMMING
B. Tech. Semester - IV(Computer Science and Engg.) (Common with ECE,
IT,IC,EEE &AEI in
Vth sem)

L	T	P	Credits			25
				Class Work	:	Marks
3	1	--	4	Examination	:	75Mark
				Total	:	s
				Duration of	:	100
				Examination	:	Marks
						: 3 Hours

Unit-I

C++ Standard Library, Preprocessor Directives, illustrative Simple C++ Programs. Header Files and Namespaces, library files. Concept of objects, Object Oriented Analysis & Object Modeling techniques. Object Oriented Concepts: 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, Abstract Classes, Reusability

Classes and Data Abstraction: Introduction, Structure Definitions, Accessing Members of Structures, Class Scope and Accessing Class Members, Controlling Access Function And Utility Functions, Initializing Class Objects: Constructors.

Unit-II

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 iterators, Function overloading.

Operator Overloading: Introduction, Fundamentals of Operator Overloading, Restrictions On Operators Overloading, Operator Functions as Class Members vs. as Friend Functions, Overloading, «, »

Unit-III

Inheritance: Introduction, 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.

Unit-IV

Files and I/O Streams and various operation on files. Stream Input/Output Classes and Objects, Stream Output, Stream Input, Unformatted I/O (with read and write), Stream Manipulators, StreamFormatStates, StreamErrorStates.

Templates & Exception Handling: 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, Re-throwing an Exception, Exception specifications, Processing Unexpected Exceptions, Constructors, Destructors and Exception Handling, Exceptions and Inheritance.

TEXT BOOKS

Object Oriented Programming in Turbo C++ by Robert Lafore ,1994, The WAITE Group Press.

Programming with C++ By D Ravichandran, 2003, T.M.H

Object oriented Programming with C++ by E Balagurusamy, 2001, Tata McGraw-Hill

REFERENCE BOOKS

C++ How to Program by H M Deitel and P J Deitel, 1998, Prentice Hall
Computing Concepts with C++ Essentials by Horstmann, 2003, John Wiley,
The Complete Reference in C++ By Herbert Schildt, 2002, TMH.
C++ Programming Fundamentals by Chuck Easttom, Firewall Media.

Note: In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE 206B SYSTEM PROGRAMMING
B. Tech. Semester - IV (Computer Science and Engg.)

L	T	P	Credits	Class Work	25
3	1	--	4	Examination	: Marks
				Total	75Mark
				Duration of Examination	: s
					100
					: Marks
					: 3 Hours

Unit 1

Introduction: Evolution of Components Systems Programming, Assemblers, Loaders, Linkers, Macros, Compilers. Software tools, Text editors, Interpreters and program generators, Debug Monitors, Programming environment.

Unit 2

Assembler and Compilers: Description of single pass and two pass assemblers, use of data structures like OPTAB and SYMTAB, etc.
Various phases of compiler lexical, syntax and semantic analysis, intermediate code generation, code optimization techniques, code generation, Case study : LEX and YACC

Unit 3

Macroprocessors: Macro language and macro-processor, macro instructions, features of macro facility, macro instruction arguments, conditional macro expansion, macro calls with macro instruction defining macros. **Linkers and Loaders:** Concept of linking, different linking schemes, concept of loading and various loading schemes.

Unit 4

Editors: Line editor, full screen editor and multi window editor, Case study MS-Word, DOS Editor and vi editor.

Debuggers: Description of various debugging techniques.

Text Book:

1. Donovan J.J., Systems Programming, New York, Mc-Graw Hill, 1972.
2. Dhamdhere, D.M., Introduction to Systems Software, Tata Mc-Graw Hill, 1996.

Reference Book:

1. Aho A.V. and J.D. Ullman Principles of compiler Design Addison Wesley/ Narosa

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE 208B INFORMATION SYSTEM ANALYSIS AND DESIGN
B. Tech. Semester - IV(Computer Science and Engg) (Common with IT)

L	T	P	Credits	Class Work	25
3	1	--	4	Examination	: Marks
				Total	75Mark
				Duration of	: s
				Examination	100
					: Marks
					: 3 Hours

UNIT - I

Introduction to System Development: Categories of Information Systems, Structured analysis method, System prototype method, succeeding as system analyst.

Analysis: Feasibility study, Feasibility considerations, Steps in feasibility analysis, Cost and Benefit analysis, Procedure for cost and benefit determination.

UNIT-II

Requirement Analysis: Problem definition, Identification and Investigation of system, Fact finding techniques, Tools for documenting procedures and decisions, Data Flow Diagrams, Data Dictionaries, Decision Tables, and Decision Trees.

UNIT-III

Design: System design considerations, Process and stages of system design: Logical and Physical, Selection of best alternate design strategy.

Design of Input and Output: Capturing data for input, Input validation design of output: Output objectives, Types of output, Presentation format of output, Design of software: Top Down Structure, Coupling, Cohesion, Span of control, Module size, Shared modules. Training, Conversion Methods

UNIT-IV

Object Oriented Design and Modeling: Introduction to object oriented design, Designing Object responsibilities, and Object reusability.

Case Study of Some Common Systems: Inventory control, Laboratory management systems, Hotel reception system, Hospital management system etc./ Seminar on State-of the-art technology.

Text Books

1. Senn, J. A., Analysis and Design of Information Systems, Tata McGraw Hill (1989) 2nd ed.
Whitten, J. and Bentley, L., Introduction to Systems Analysis and Design, Tata McGraw Hill (2006).

Reference Books

Hoffer and Hoffer, Modern System Analysis and Design, Pearson Education.

Note:- In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE 210 B COMPUTER ORGANIZATION AND ARCHITECTURE

B. Tech. Semester - IV (Computer Science and Engg.) (Common with ECE Vth Sem)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: Marks
				Duration of Examination	: 3 Hours

Unit-1:

General System Architecture: Classification of computers (Based on Computation methodology(Analog, digital, hybrid), based on generations, based on size & capability, based on Flynn's criteria); Multilevel viewpoint of a machine: digital logic, micro architecture, ISA, operating systems, high level language ; Register Transfer language; Computer Buses (basic design using multiplexers), Bus width, Bus clocking(synchronous , asynchronous), bus arbitration, Bus examples(ISA bus, PCI bus, Universal serial bus) ; Computer Arithmetic ,Addition , subtraction (signed magnitude , signed 2's complement , Multiplication (Booth's algorithm)

Unit-2:

CPU Organization: CPU Architecture types (accumulator, register, stack, memory/register) Instruction cycle (Fetch-Decode-Execute);

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)

Unit-3:

Input /Output & Control Unit: Input Output Interface , Asynchronous data transfer (Strobe control, handshaking , serial transfer); Serial Vs parallel data transmission;Modes of data transfer (Programmed I/O, Interrupt driven, Direct Memory access (DMA)).

Control Unit design:- Control unit design methods (hardwired & microprogrammed) Control Memory, Address Sequencing, Micro instructions.

Unit-4:

Memory Organization: Memory device characteristics(access/ cycle time, cost per bit, volatility , storage density) ;Memory hierarchy ;Main memory Design (Semiconductor RAM & ROM organization, memory expansion,Static & dynamic memory types , their comparison); Associative memory Design ,Match logic ,Locality of reference principle(Temporal & Spatial)

Cache mapping(Direct , associative , set associative); Cache writing policies (Copy-Back , Write-through); Virtual Memory(Address space , memory space , Address mapping using pages , Page replacement)

TEXT BOOKS:

Computer System Architecture by M. Mano, Prentice-Hall.

Structured Computer Organisation by A.S. Tanenbaum, 6th edition, Prentice-Hall of India, Eastern Economic Edition

REFERENCE BOOKS:

Computer Organization, 5th Edi, by Carl Hamacher, Zvonko Vranesic,2002,
SafwatZaky.

Computer Organization and Design, 2nd Ed., by David A. Patterson and John L.
Hennessy, Morgan 1997, Kaufmann.

3. Computer Architecture and Organization, 3rd Edi, by John P. Hayes, 1998, TMH

Computer Organisation & Architecture: Designing for performance by W. Stallings, 4th edition, 1996, Prentice-Hall International edition.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE 222B DATABASE MANAGEMENT SYSTEMS LAB
B. Tech. Semester - IV(Computer Science and Engg) (Common with IT)

L	T	P	Credits	Class Work	20
		2	1	Examination	: Marks
					30Mar
				Total	: Marks
				Duration of	3
				Examination	: Hours

Experimental work will be based upon the course CSE 202B

Introduction to SQL.

To study Basic SQL commands (create database, create table, use , drop, insert) and execute the following queries using these commands:

Create a database named ' Employee'.

Use the database 'Employee' and create a table 'Emp' with attributes

'ename','ecity','salary','enumber','eaddress','depttname'.

Create another table 'Company' with attributes 'cname','ccity','numberofemp','empnumber' in the database 'Employee'.

To study the viewing commands (select , update) and execute the following queries using these commands:

Find the names of all employees who live in Delhi. Increase the salary of all employees by Rs. 5,000.

Find the company names where the number of employees is greater than 10,000. Change the Company City to Gurgaon where the Company name is 'TCS'.

To study the commands to modify the structure of table (alter, delete) and execute the following queries using these commands:

Add an attribute named ' Designation' to the table 'Emp'.

Modify the table 'Emp', Change the datatype of 'salary' attribute to float. Drop the attribute 'depttname' from the table 'emp'.

Delete the entries from the table ' Company' where the number of employees are less than 500.

To study the commands that involve compound conditions (and, or, in , not in, between , not between , like , not like) and execute the following queries using these commands:

Find the names of all employees who live in ' Gurgaon' and whose salary is between Rs. 20,000 and Rs. 30,000.

Find the names of all employees whose names begin with either letter 'A' or 'B'.

Find the company names where the company city is 'Delhi' and the number of employees is not between 5000 and 10,000.

Find the names of all companies that do not end with letter 'A'.

To study the aggregate functions (sum, count, max, min, average) and execute the following queries using these commands:

Find the sum and average of salaries of all employees in computer science department. Find the number of all employees in company 'TCS'.

Find the maximum and the minimum salary in the HR department.

To study the grouping commands (group by, order by) and execute the following queries using these commands:

List all employee names in descending order.

Find number of employees in each department where number of employees is greater than 5.

List all the department names where average salary of a department is Rs.10,000.

To study the commands involving data constraints and execute the following queries using these commands:

Alter table 'Emp' and make 'enumber' as the primary key. Alter table 'Company' and add the foreign key constraint.

Add a check constraint in the table 'Emp' such that salary has the value between 0 and Rs.1,00,000.

To study the commands for aliasing and renaming and execute the following queries using these commands:

Rename the name of database to 'Employee1'. Rename the name of table 'Emp' to 'Emp1'.

Change the name of the attribute 'ename' to 'empname'.

To study the commands for joins (cross join, inner join, outer join) and execute the following queries using these commands:

Retrieve the complete record of an employee and its company from both the table using joins. List all the employees working in the company 'TCS'.

To study the various set operations and execute the following queries using these commands:

List the number of all employees who live in Delhi and whose company is in Gurgaon or if both conditions are true.

List the number of all employees who live in Delhi but whose company is not in Gurgaon.

To study the various scalar functions and string functions (power, square, substring, reverse, upper, lower, concatenation) and execute the following queries using these commands:

Reverse the names of all employees.

Change the names of company cities to uppercase. Concatenate name and city of the employee.

To study the commands for views and execute the following queries using these commands: Create a view having ename and ecity.

In the above view change the ecity to 'Delhi' where ename is 'John'. Create a view having attributes from both the tables.

Update the above view and increase the salary of all employees of IT department by Rs.1000.

Study of Integrity Constraints in SQL.

Study of Use of Group By and Having Clause.

Study of various types of Views.

Study of Indexes in SQL.

Study of Aggregate Functions in SQL.

Teacher can give queries based on SQL Commands.

CSE 224B OBJECT ORIENTED PROGRAMMING LAB

B. Tech. Semester - IV (Computer Science and Engg.) (Common with ECE, IT, IC, EEE & AEI in Vth Sem)

L	T	P	Credits	Class Work	: 20 Marks
		2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

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.

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     1
```

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
```

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 maybe `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 object on display.

Create a class `rational` which represents a numerical value by two double values-
NUMERATOR

0 DENOMINATOR Include the following public member

Functions: constructor with no arguments
(default).

constructor with two arguments.

void reduce() that reduces the rational number by eliminating the highest
common

factor between the numerator and denominator.
Overload + operator to add two rational number
Overload » operator to enable input through cin
Overload « operator to enable output through cout.
Write a main () to test all the functions in the class.

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.

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

- Name of the patient
- Date of admission
- Disease
- 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 an the pediatric patients (less than twelve years in age).

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.

Imagine a tollbooth with a class called toll Booth. The two data items of 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 displays the two totals.

CSE 226B SYSTEM PROGRAMMING LAB
B. Tech. Semester - IV(Computer Science and Engg)

L	T	P	Credits	Class Work	: 20
		2	1	Examination	: Marks
				Total	30Mar
				Duration of	: ks
				Examination	50
					: Marks
					3
					: Hours

Programming problems using MASM.

3 - 4 Simple output only programs

Simple programs using Assembly directives

Simple programs using Loops

programs using procedures

Numeric input/output procedures

Program using Macros and Recursion

Programming with date files

Programming with System Interrupts

The assignment will be based on CSE 206B code.

GES 203B ENVIRONMENTAL STUDIES FIELD WORK

B. Tech. Semester –III/IV (Common for all Branches)

L	T	P	Credit	Field Work	25Marks
--	--	--	0	Total	25 Marks

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 lectures hours).

Note: The awards of this paper shall not be counted in the award of the Degree/DMC.

GPCSE 202B GENERAL PROFICIENCY AND ETHICS

B. Tech. Semester - IV (Computer Science and Engg.)

L	T	P	Credits	Examination	75Marks
1	--	--	2	Total	75 Marks

The purpose of this course is to inculcate a sense of professionalism in a student along with personality development in terms of quality such as receiving, responding, temperament, attitude and outlook. The student efforts will be evaluated on the basis of his/ her performance / achievements in different walks of life.

A Faculty Counselor will be attached to a group of students which will remain associated with him /her during the entire period of the degree program in the University. Each faculty member will serve as a faculty counselor. They will act like a local guardian for the students associated with him / her and will help them in terms of career guidance, personal difficulties.

The student will present a written report before the committee with following in view:

The student will present before the committee his/her achievements during the current academic session in the form of a written report highlighting followings:

- I. Academic Performance -----
- Extra Curricular Activities / Community Service, Hostel Activities **(8 Marks)**
- III Technical Activities / Industrial, Educational tour **(8 Marks)**
- IV Sports/games **(14 Marks)**
- V Moral values & Ethics **(15 Marks)**

NOTE: Report submitted by the students should be typed on both sides of the paper.

A student will support his/her achievement and verbal & communicative skill through presentation before the committee.

(30 Marks)

Moral values & Ethics

Syllabus - Process for Value Education, self-evaluation concept and process.

A minor test will be conducted during the semester and It will be the duty of the concerned teacher assigned to teach Moral values & Ethics to submit the awards to respective chairman of the department / Director/Principal.

The evaluation of this course will be made by the following Committee.

University Departments:

- | | | |
|---|-------------------------------|----------|
| 1 | Chairperson of the Department | Chairman |
| 2 | Senior Most Faculty Counselor | Member |
| 3 | Vice- Chancellor's Nominee | Member |

Affiliated Colleges:

- | | | |
|---|---|----------|
| 1 | Director/Principal | Chairman |
| 2 | Head of the Department/Sr. Faculty | Member |
| 3 | External Examiner to be appointed by the University | Member |

Note: Remuneration will be paid to the external examiner only (at par with the other practical examinations).