Annexure No.	**32 D**
SCAA Dated	**29.02.2008**

BHARATHIAR UNIVERSITY :: COIMBATORE – 641 046

REGULATIONS FOR B.Sc. SOFTWARE SYSTEM DEGREE COURSE
with Semester System

(with effect from 2007-2008)

1. **Eligibility for Admission to the Course**

Candidate for admission to the first year of the B.Sc. SOFTWARE SYSTEM degree course shall be required to have passed the higher secondary examination conducted by the Govt. of Tamil Nadu with any one of the following subjects: Mathematics / Computer Science / Statistics / Business mathematics or other examinations accepted as equivalent there to by the Syndicate, subject to such other conditions as may be prescribed there for.

2. **Duration of the Course**

The course shall extend over a period of three years comprising of six semesters with two semesters in one academic year. There shall not be less than 90 working days for each semester. Examination shall be conducted at the end of every semester for the respective subjects.

3. **Course of Study**

The course of study for the B.Sc. SOFTWARE SYSTEM degree course shall consist of the following

a) Part - I

Tamil or any one of the following modern/classical languages i.e. Telugu, Kannada, Malayalam, Hindi, Sanskrit, French, German, Arabic & Urdu. It shall be offered for the first two semesters with one examination at the end of each semester.

b) Part – II : English

The subject shall be offered during the first two semesters with one examination at the end of each semester. During third semester the subject communication skills will be offered as one of the core subject.

c) Foundation Course

The Foundation course shall comprise of two stages as follows:

Foundation Course A : General Awareness (I & II semesters)
Foundation Course B : Environmental Studies (III & IV semesters)

The syllabus and scheme of examination for the foundation course A, General awareness shall be apportioned as follows.

From the printed material supplied by the University - 75%
Current affairs & who is who? - 25%

The current affairs cover current developments in all aspects of general knowledge which are not covered in the printed material on this subject issued by the University.

The Foundation course B shall comprise of only one paper which shall have Environmental Studies.

d) Part – III

Group A : Core subject – As prescribed in the scheme of examination.
Examination will be conducted in the core subjects at the end of every semester
Group B: allied subjects -2 subjects-4 papers
Examination shall be conducted in the allied subjects at the end of first four semesters.
Group C: application oriented subjects: 2 subjects – 4 papers
The application –oriented subjects shall be offered during the last two semesters of study viz., V and VI semesters. Examination shall be conducted in the subjects at the end of V & VI semesters.
Group D: field work/institutional training
Every student shall be required to undergo field work/institutional training, related to the application-oriented subject for a period of not less than 2 weeks, conveniently arranged during the course of 3rd year. The principal of the college and the head of the department shall issue a certificate to the effect that the student had satisfactorily undergone the field work/institutional training for the prescribed period.

Diploma Programme:
All the UG programmes shall offer compulsory diploma subjects and it shall be offered in four papers spread over each paper at the end of III, IV, V, & VI semesters.

e) Co-Curricular activities: NSS/NCC/Physical education

Every student shall participate compulsorily for period of not less than two years (4 semesters) in any one of the above programmes.

The above activities shall be conducted outside the regular working hours of the college. The principal shall furnish a certificate regarding the student's performance in the respective field and shall grade the student in the five point scale as follows

A-Exemplary
B-very good
C-good
D-fair
E-Satisfactory

This grading shall be incorporated in the mark sheet to be issued at the end of the appropriate semester (4th or 5th or 6th semester).

(Handicapped students who are unable to participate in any of the above activities shall be required to take a test in the theoretical aspects of any one of the above 3 field and be graded and certified accordingly).

4. **Requirement to appear for the examinations**

a) a candidate will be permitted to appear for the university examinations for any semester if
   i) He/she secures not less than 75% of attendance in the number of working days during the semester.

ii) He/she earns a progress certificate from the head of the institution, of having satisfactory completed the course of study prescribed in the subjects as required by these regulations, and

iii) His/her conduct has been satisfactory.

Provided that it shall be open to the syndicate, or any authority delegated with such powers by the syndicate, to grant exemption to a candidate who has failed to earn 75% of the attendance prescribed, for valid reasons, subject to usual conditions.

b) A candidate who has secured less than 65% but 55% and above attendance in any semester has to compensate the shortage in attendance in the subsequent semester besides, earning the required percentage of attendance in that semester and appear for both semester papers together at the end of the latter semester.

c) A candidate who has secured less than 55% of attendance in any semester will not be permitted to appear for the regular examinations and to continue the study in the subsequent semester. He/she has to rejoin the semester in which the attendance is less than 55%

d) A candidate who has secured less than 65%of attendance in the final semester has to compensate his/her attendance shortage in a manner as decided by the concerned head of the department after rejoining the same course.

5. **Restrictions to appear for the examinations**

a) Any candidate having arrear paper(s) shall have the option to appear in any arrear paper along with the regular semester papers.

b) "Candidates who fail in any of the papers in Part I, II & III of UG degree examinations shall complete the paper concerned within 5 years form the date of admission to the said course, and should they fail to do so, they shall take the examination in the texts/ revised syllabus prescribed for the immediate next batch of candidates. If there is no change in the texts/syllabus they shall appear for the examination in that paper with the syllabus in vogue until there is a change in the texts or syllabus. In the event of removal of that paper consequent to change of regulation and / or curriculum after 5 year period, the candidates shall have to take up an equivalent paper in the revised syllabus as suggested by the chairman and fulfill the requirements as per regulation/ curriculum for the award of the degree.

6. **Medium of Instruction and examinations**

The medium of instruction and examinations for the papers of Part I and II shall be the language concerned. For part III subjects other than modern languages, the medium of instruction shall be either Tamil or English and the medium of examinations is in English/Tamil irrespective of the medium of instructions. For modern languages, the medium of instruction and examination will be in the languages concerned.

7. **Submission of Record Note Books for practical examinations**

Candidates appearing for practical examinations should submit bonafide Record Note Books prescribed for practical examinations, otherwise the candidates will not be permitted to appear for the practical examinations. However, in genuine cases where the students, who could not submit the record note books, they may be permitted to appear for the practical examinations, provided the concerned Head of the department from the institution of the candidate certified that the candidate has performed the experiments prescribed for the course. For such candidates who do not submit Record Books, zero (0) marks will be awarded for record note books.

8. **Passing Minimum**

a) A candidate who secures not less than 40% of the total marks in any subject including the Diploma and Foundation courses (theory or Practical) in the University examination shall be declared to have passed the examination in the subject (theory or Practical).

b) A candidate who passes the examination in all the subjects of Part I, II and III (including the Diploma and Foundation courses) shall be declared to have passed, the whole examination.

9. **Improvement of Marks in the subjects already passed**

Candidates desirous of improving the marks awarded in a passed subject in their first attempt shall reappear once within a period of subsequent two semesters. The improved marks shall be considered for classification but not for ranking. When there is no improvement, there shall not be any change in the original marks already awarded.

10. **Classification of Successful candidates**

a) A candidate who passes all the Part III examinations in the First attempt within a period of three years securing 75% and above in the aggregate of Part III marks shall be declared to have passed B.A/ B.Sc./B.Com./B.B.M. degree examination in **First Class with Distinctions**

b) (i) A candidate who passes all the examinations in Part I or Part II or Part III or Diploma securing not less than 60 per cent of total marks for concerned part shall be declared to have passed that part in **First Class**

(ii) A candidate who passed all the examinations in Part I or Part II or Part III or Diploma securing not less than 50 per cent but below 60 per cent of total marks for concerned part shall be declared to have passed that part in **Second Class**

(iii) All other successful candidates shall be declared to have passed the Part I or Part II or Part III or Diploma examination in **Third Class**

11. **Conferment of the Degree**

No candidate shall be eligible for conferment of the Degree unless he / she,

i. has undergone the prescribed course of study for a period of not less than six semesters in an institution approved by/affiliated to the University or has been exempted from in the manner prescribed and has passed the examinations as have been prescribed therefor.

ii. Has satisfactory participates in either NSS or NCC or Physical Education as evidenced by a certificate issued by the Principal of the institution.

iii. Has successfully completed the prescribed Field Work/ Institutional Training as evidenced by certificate issued by the Principal of the College.

12. **Ranking**

A candidate who qualifies for the UG degree course passing all the examinations in the first attempt, within the minimum period prescribed for the course of study from the date of admission to the course and secures I or II class shall be eligible for ranking and such ranking will be confined to 10 % of the total number of candidates qualified in that particular branch of study, subject to a maximum of 10 ranks.

The improved marks will not be taken into consideration for ranking.

13. **Additional Degree**

Any candidate who wishes to obtain an additional UG degree not involving any practical shall be permitted to do so and such candidate shall join a college in the III year of the course and he/she will be permitted to appear for par III alone by granting exemption form appearing Part I, Part II and common allied subjects (if any), already passed by the candidate. And a candidate desirous to obtain an additional UG degree involving practical shall be [permitted to do so and such candidate shall join a college in the II year of the course and he/she be permitted to appear for Part III alone by granting exemption form appearing for Part I, Part II and the common allied subjects. If any, already passed. Such candidates should obtain exemption from the university by paying a fee of Rs.500/-.

14. **Evening College**

The above regulations shall be applicable for candidates undergoing the respective courses in Evening Colleges also.

15. **Syllabus**

The syllabus for various subjects shall be clearly demarcated into five viable units in each paper/subject.

16. **Revision of Regulations and Curriculum**

The above Regulation and Scheme of Examinations will be in vogue without any change for a minimum period of three years from the date of approval of the Regulations. The University may revise /amend/ change the Regulations and Scheme of Examinations, if found necessary.

17. Transitory Provision

Candidates who have undergone the Course of Study prior to the Academic Year 2007-2008 will be permitted to take the Examinations under those Regulations for a period of four years i.e. up to and inclusive of the Examination of April 2012 thereafter they will be permitted to take the Examination only under the Regulations in force at that time.

BHARATHIAR UNIVERSITY, COIMBATORE – 46

B.Sc., Software System & Compulsory Diploma In Multimedia & Animation

Scheme of Examination For the Academic Year 2007-08

SUBJECTS	Hrs/Wk	Max. Marks
I SEMESTER :		
1.Part – I : Language – 1	6	100
2.Part – II : Language – II (English)	6	100
3.Allied 1: Computer Oriented Numerical & Statistical Methods	4	100
4.Core 1 : Data Structures and C Programming	4	100
5.Core 2 : Digital Fundamentals and Architecture	4	100
6.Core Lab1: C Programming Using Data Structures	4	100
7.Foundation Course A(General Awareness)	2	-
II SEMESTER :		
1.Part – I : Language – 1	6	100
2.Part – II : Language – II (English)	6	100
3.Allied 2: Computer Based Optimization Techniques	6	100
4.Core 3 : Object Oriented Programming with C++	5	100
5.Core Lab2: Programming Lab in C++	5	100
6.Foundation Course A(General Awareness)	2	100
III SEMESTER :		
1.Allied 3: Business Accounting	6	100
2.Core 5: Communication Skills	4	100
3.Core 6: Java Programming	5	100
4.Core 7: Operating System	5	100
5.Core Lab3:Programming Lab - Java	5	100
6.Diploma 1(Theory): Multimedia & its Applications	3	100
7.Foundation Course B : (Environment Studies)	2	-
IV SEMESTER :		
1.Allied 4: Management Information System	6	100
2.Core 8: Visual Programming (VB)	6	100
3.Core 9: Software Engineering	6	100
4.Core Lab4: Programming Lab - VB	6	100
5.Diploma 2(Lab): Multimedia Lab	4	100
6.Foundation Course B: (Environment Studies)	2	100

V SEMESTER :		
1.Core 10: Relational Database Management Systems	5	100
2.Core 11: Artificial Intelligence	6	100
3.Core 12: Client / Server Computing	5	100
4.AOS 1 : E-Commerce	6	100
5.Diploma 3(Theory): Animation Techniques	3	100
6.Core Lab5: RDBMS Lab –ORACLE	5	100
VI SEMESTER :		
1.Core 13: Software Testing	5	100
2.Core 14: Computer Networks	5	100
3.Core 15: Web Technology	5	100
4.AOS 2 : Data Mining	5	100
5.Diploma 4(Lab): Animation Lab	4	100
6.Core Lab 6: Software Testing Lab	6	100
Total Marks B.Sc. (CS) Course		3200
Diploma Course		400

BHARATHIAR UNIVERSITY , COIMBATORE -46

Course	**B.Sc (Software System)**
Effective from	**2007-2008 and Onwards**
Semester	**I**
Subject	Allied 1: **Computer Oriented Numerical & Statistical Methods**

Subject Description:

This subject deals with various numerical methods and statistical applications for computer science.

Goal:

To learn about the computer based numerical and statistical methods.

Objective:

On successful completion of this subject the students should have :

- Understanding various concepts of numerical analysis.
- Learning various applications statistical methods for Computer Science.

Unit I:

The Solution of Numerical Algebraic & Transcendental Equations – Bisection method – Newton-Raphson method - The method of false position.The Solution of Simultaneous Linear Algebraic Equation – Gauss Elimination method – Gauss Jordon Elimination method – Gauss Seidal method of iteration – Gauss – Jacobi method

Unit II :

Numerical Differentiation – Newton's Forward Difference formula - Newton's backward difference formula – numerical Integration – Trapezoidal rule - Simpson's One-third rule – Simpson's three - eighths rule.

Unit III:

Interpolation – Newton forward interpolation formula – Newton backward interpolation formula – LaGrange's formula – Numerical solution of ordinary differential equations – Taylor method – Euler method – Range kutta method.

Unit IV:

Measures of central tendency – Mean, Median and mode – Relation between mean, median and mode. Dispersion – Range – Mean deviation & standard deviation.

Unit V:

Correlation – Karl Pearson`s Coefficient of Correlation – Rank correlation regression – Regression Equations- Difference between correlation & Regression

Text Book:

1. Numerical Methods – P. Kandasamy , K. Thilagavathi, K. Gunavathi. S. & company Ltd. New Delhi Revised Edition 2005 (UNIT I, II & III)
2. Statistical – R. S. N. Pillai, V. Bagavathi **Sultan Chand and Sons** & Company Ltd. New Delhi. Reprint 2005. (UNIT IV & V)

Reference Book:

1. Computer oriented numerical methods – V. Rajaraman, PHI Pub.
2. Numerical methods – E. Balagurusamy Tata MC Graw Hill.
3. Fundamental of Mathematical statistics S C Gupta, V. K. Kapoor **Sultan Chand and Sons**

BHARATHIAR UNIVERSITY , COIMBATORE -46

Course	**B.Sc (Software System)**
Effective from	**2007-2008 and Onwards**
Semester	**I**
Subject	**CORE 1 : DATA STRUCTURES AND C PROGRAMMING**

Subject Description: This subject deals with the methods of data structures using C programming language.

Goal: To learn about C programming language using data structural concepts.

Objective: On successful completion of this subject the students should have :

- Writing programming ability on data structures dealing with Stacks, Queues, List, Searching and Sorting algorithms etc.,

UNIT I:

Programming development methodologies – Programming style – Problem solving techniques: Algorithm, Flowchart, Pseudo code - Structure of a C program – C character set – Delimiters – Keywords – Identifiers – Constants – Variables – Rules for defining variables – Data types – Declaring and initializing variables – Type conversion.

Operators and Expressions – Formatted and Unformatted I/O functions – Decision statements – Loop control statements.

UNIT II:

Arrays – String and its standard functions.Pointers – Functions – Preprocessor directives: #define, #include, #ifndef, Predefined macros.

UNIT – III:

Structure and Union: Features of structure, Declaration and initialization of structure, Structure within structure, Array of structure, Pointer to structure, Bit fields, Enumerated data types, Union.Files: Streams and file types, Steps for file operation, File I/O, Structures read and write, other file functions, Command line arguments, I/O redirection.

UNIT – IV:

Linear data structures: Introduction to data structures – List: Implementations, Traversal, Searching and retrieving an element, Predecessor and Successor, Insertion, Deletion, Sorting, Merging lists – Stack: Representation, Terms, Operations on stack, Implementation. Single linked list, Linked list with and without header, Insertion, Deletion, Double linked list – Queues: Various positions of queue, Representation

UNIT V:

Searching and Sorting – Searching: Linear, Binary. Sorting – Insertion, Selection, Bubble, Quick, Tree, Heap.

TEXT BOOK:

Ashok N Kamthane, "PROGRAMMING AND DATA STRUCTURES" – Pearson Education, First Indian Print 2004, ISBN 81-297-0327-0.

REFERENCE BOOK:

1. E Balagurusamy: Programming in ANSI C, Tata McGraw-Hill, 1998.
2. Ellis Horowitz and Sartaj Sahni: Fundamentals of Data Structure, Galgotia Book Source, 1999.
3. Data structure using C – Aaron M Tanenbaum, Yedidyeh langsam, Moshe J Augenstein, PHI Pub

BHARATHIAR UNIVERSITY , COIMBATORE -46

Course	**B.Sc (Software System)**
Effective from	**2007-2008 and Onwards**
Semester	**I**
Subject	**CORE 2 :DIGITAL FUNDAMENTALS AND ARCHITECTURE**

Subject Description: This subject deals with fundamentals of digital computers, Microprocessors and Architecture.

Goal: To learn about computer fundamentals and its organization.

Objective: On successful completion of this subject the students should have :

- Knowledge on digital circuits
- Microprocessor architecture
- Interfacing of various components

Unit I :

Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Half subtract or, Full subtractor, Parallel binary subtractor - Digital Logic: the Basic Gates – NOR, NAND, XOR Gates.

Unit II:

Combinational Logic Circuits: Boolean algebra –Karnaugh map – Canonical form 1 – Construction and properties – Implicants – Don't care combinations - Product of sum, Sum of products, simplifications.Sequential circuits: Flip-Flops : RS, D, JK, T - Multiplexers – Demultiplexers – Decoder – Encoder - Counters.

Unit III:

MICROPROCESSOR: Architecture – Bus Organization – Functional diagram and pin out diagram of 8085 - Addressing modes of 8085 – Instruction set of 8085 – I/O Schemes – Peripherals and Interfaces.

Unit IV:

Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking – Priority Interrupt: Daisy-Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.

Unit V:

Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing Into Cache Initialization. Virtual Memory: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory Page Table, Page Replacement.

Text Books:

1.Digital Electronics Circuits and Systems, V.K. PURI, TATA McGRAW-HILL Pub. Company
2.Computer System Architecture, M. MORRIS MANO, Pearson Education Pub, III Edition.

Reference Books:

1.Digital principles and applications, Albert paul malvino, Donald P Leach, McGrawHill, 1996.
2. Computer Architecture, Carter, Schaums outline series, TMH.

BHARATHIAR UNIVERSITY , COIMBATORE -46

Course	**B. Sc (Software System)**
Effective from	**2007-2008 and Onwards**
Semester	**I**
Subject	**CORE Lab 1 :C Programming Using Data Structures**

- Write a Program to Create Stack Operations.
- Write a Program to Create Queue Operations.
- Write a Program to Create Infix to Postfix Conversion.
- Write a Program to Implement Linear & Binary Search to find a Particular Name in a List of Names.
- Write a Program to Create Polynomial Addition using Single Linked Lists.
- Write a Program Using Double Linked Lists.
- Write a Program for Linked List Representation of Employee Records & maintain it with the following operations.

  - to add a new record , to delete an existing record , print the information about an employee , Findining the number of employees in this stucture.
- Write a Program to arrange a set of numbers in Ascending Order using Heap Sort.
- Write a Program to arrange a set of numbers in Ascending Order Using Quick Sort.
- Write a Program Using Shortest Path.
- Write a Program Using Tree Traversals.

BHARATHIAR UNIVERSITY , COIMBATORE -46

Course	**B.Sc (Software System)**
Effective from	**2007-2008 and Onwards**
Semester	**II**
Subject	Allied 2: **COMPUTER BASED OPTIMIZATION TECHNIQUES**

Subject Description: This subject deals with various optimization techniques for linear programming , Transportation and assignment problems , Game theory ,PERT and CPM.
Goal: To learn about the managerial concepts like decision making , optimization etc.
Objective: On successful completion of this subject the students should have :

- Understanding various mathematical applications in industries.
- Decision making for real time environment.

UNIT I:

Linear Programming - Mathematical Model assumption of linear Programming – Graphical method - Principles of Simplex method, Big-M Method ,Duality, Dual simplex method.

UNIT II:

Transportation and assignment problem - Integer Programming Branch and Round Techniques - Assignment and Traveling Salesman Problem.

UNIT III:

Game Theory - Concept of Pure and Mixed Strategies – Solving 2 x 2 matrix with and without saddle point - n x 2 - 2 x m games. Replacement models - Elementary replacement models - present value - rate of return - depreciation - Individual replacement – Group replacement.

UNIT IV : (Derivations not included)

Queuing Theory - definition of waiting line model -Queue discipline - traffic intensity - poison arrival – Birth death process - Problem from single server: finite and infinite population model – Problems from multi server: finite and infinite population model.

UNIT V:

PERT & CPM - Network representation - backward pass - Forward pass - computation - Pert Network - Probability factor – updating and Crashing.

TEXT BOOKS

1.MANMOHAN, P.K. GUPTA, KANTHISWARUP - OPERATIONS RESEARCH -S. CHAND & SONS - 1997.

REFERENCE BOOKS

1. Hamdy A Taha “Operations Research” , Pearson Education, 7th edition,2002
2. Problems in operations research - P K Gupta D S Hira, S. Chand Pub

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Course	**B.Sc (Software System)**
Effective from	**2007-2008 and Onwards**
Semester	**II**
Subject	**CORE 3 :**OBJECT ORIENTED PROGRAMMING WITH C++

Subject Description: This subject deals with the programming concepts of Object Oriented Programming using C++.

Goal: To learn about Object Oriented Programming concepts.

Objective: On successful completion of this subject the students should have :

- Writing programming ability on OOPS concepts like Encapsulation, Data abstraction, Inheritance, Polymorphism and Exception handling etc.,

UNIT I:

Introduction to C++ - Key Concepts of OOP – Advantages – OO Languages – I/O in C++ - C++ Declarations - Control Structures – Decision Making Statements – If…Else – Jump – GOTO – Break – Continue – Switch Case Statements – Loops in C++ - For – While – Do…While loops – Functions in C++, In line Functions – Function Overloading.

UNIT II:

Class and Objects: Declaring objects – Defining member functions – Static member variables and functions – Array of objects – Friend functions – Overloading member functions – Bit fields and Class – Constructor and Destructors – Characteristics – Calling constructor and Destructors – Constructor and Destructor with static member.

UNIT III:

Operator Overloading: Overloading unary, Binary operators – Overloading friend functions – Type conversion - Inheritance: Types of inheritance: Single, Multilevel, Multiple, Hierarchical, Hybrid and Multi path inheritance – Virtual Base classes – Abstract Classes.

UNIT IV:

Pointers: Declaration – Pointer to class, object – THIS pointer – Pointer to derived classes and base classes – Arrays – Characteristics – Arrays of classes – Memory models – New and delete operators – Dynamic objects – Binding, Polymorphisms and Virtual functions.

UNIT V:

Files: File stream classes – File Modes – Sequential read/write operations – Binary and ASCII files – Random access operation – Templates – Exception handling – Strings – Declaring and initializing string objects – String attributes – Miscellaneous functions.

TEXT BOOKS

Ashok N Kamthane: Object Oriented Programming with ANSI and Turbo C++, Pearson Education Publ., 2003.

REFERENCE BOOKS

1. E. Balagurusamy: Object Oriented Programming with C++, TMH Pub., 1998.
2. Maria Litvin and Gary Litvin: C++ for you++, Vikas Publ, 2002.
3. John R Hubbard: Programming with C++, TMH II Edition, 2002.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 onwards**
Semester	**II**
Subject	**Core Lab2: Programming Lab in C++**

1. Write a C++ Program to create a class to implement the Data Structure STACK. Write a constructor to initialize the TOP of the STACK. Write a member function PUSH() to insert an element and member function POP() to delete an element check for overflow and underflow conditions..

2. Write a C++ Program to create a class ARITHMETIC which consists of a FLOAT and an INTEGER variable. Write a Member function ADD (),SUB(),MUL(),DIV() to perform addition, subtraction, multiplication, division respectively. Write a member function to get and display values.

3. Write a C++ Program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.

4. Write a C++ Program to create a class FLOAT that contains one float data member. Overload all the four Arithmetic operators so that they operate on the object FLOAT.

5. Write a C++ Program to create a class STRING. Write a Member Function to initialize ,get and display stings. Overload the Operator "+" to Concatenate two Strings, "= =" to Compare two strings

6. Write a C++ Program to create class, which consists of EMPLOYEE Detail like E_Number, E_Name, Department, Basic, Salary, Grade. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.

7. Write a C++ Program to create a class SHAPE which consists of two VIRTUAL FUNCTIONS Calculate_Area() and Calculate_Perimeter() to calculate area and perimeter of various figures. Derive three classes SQUARE, RECTANGLE, TRIANGE from class Shape and Calculate Area and Perimeter of each class separately and display the result.

8. Write a C++ Program to create two classes each class consists of two private variables, a integer and a float variable. Write member functions to get and display them. Write a FRIEND Function common to both classes, which takes the object of above two classes as arguments and the integer and float values of both objects separately and display the result.

9. Write a C++ Program using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum of the above two matrices separately and display the sum of these arrays individually.

10. Write a C++ Program to check whether the given string is a palindrome or not using Pointers.

11. Write a C++ Program to create a File and to display the contents of that file with line numbers.

12. Write a C++ Program to merge two files into a single file.

Annexure No.	58 A
SCAA Dated	20.02.2008

BHARATHIAR UNIVERSITY :: COIMBATORE – 641 046.

ALLIED PAPER – BUSINESS ACCOUNTING
FOR B.Sc., Computer Science, B.Sc. Software System and BCA degree courses
(for the students admitted from the academic year 2007-2008 and onwards)

Goal: To enable the students to learn principles and concepts of Accountancy.
Objective: On successful completion of this course, the student should have understood

- Concepts and conventions of Accounting.
- Basic Accounting framework

UNIT –I

Fundamentals of Book Keeping – Accounting Concepts and Conventions – Journal – Ledger – Subsidiary books – Trial balance.

UNIT – II

Final accounts of a sole trader with adjustments – Errors and rectification

UNIT – III

Bill of exchange- Accommodation bills – Average due date – Account current.

UNIT – IV

Accounting for consignments and Joint ventures

UNIT – V

Bank Reconciliation statement – Receipts and Payments and income and expenditure account and Balance sheet – Accounts of professionals.

Note : Distribution of Marks between problems and theory shall be 80% and 20%.

BOOKS FOR REFERENCE

1. N.Vinayakam, P.L.Mani, K.L.Nagarajan – *Principles of Accountancy* – S.Chand & Company Ltd.,
2. T.S.Grewal – *Introduction to Accountancy*- S.Chand & Company Ltd.,
3. R.L.Gupta, V.K.Gupta, M.C.Shukla – *Financial Accounting* – Sultanchand & sons
4. T.S.Grewal, S.C.Gupta, S.P.Jain – *Advanced Accountancy*- Sultanchand & sons
5. K.L.Narang, S.N.Maheswari - *Advanced Accountancy*-Kalyani publishers
6. S.K.Maheswari, T.S.Reddy - *Advanced Accountancy*-Vikas publishers
7. A.Murthy -Financial Accounting – Margham Publishers
8. P.C.Tulsian - *Advanced Accountancy* – Tata McGraw Hill Companies.
9. A.Mukherjee, M.Hanif – *Modern Accountancy. Vol.1*- Tata McGraw Hill Companies

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**III**
Subject	**Core 6 : JAVA Programming**

Subject Description : This Subject deals with the JAVA Programming.
Goal : To learn about Java.
Objective: On Successful Completion of this subject the students should have :

- Writing Programming ability on Java like Encapsulation , Data Abstraction , Inheritance , Polymorphism and Exception handling , Applet etc.

UNIT I :

Basic Concepts of Object –Oriented Programming: Objects and Classes – Data Abstraction and Encapsulation – Inheritance – Polymorphism – Dynamic Binding – Message Communication – Benefits of Oops – History of Java.

UNIT II :

Features of Java – Differences between C , C++ and Java – Data Types of Java – Variables – Declaration of Variables – Operators in Java – Decision Making and Branching – Decision Making and Looping –Methods.

UNIT III:

Class Defining – Creating Objects – Constructors – Method Overloading – Method Overriding – Final Classes – Abstract Method & Classes. Arrays - Creating any array – Declaration of Array – Creation of Array – Initialization of Arrays – Array Length – 2 Dimensional Arrays – Strings – String Arrays – String Methods – String Buffer Class.

UNIT IV:

Creating Threads – Extending the Thread class – Lifecycle of thread – Exception – Exception Handling – Multiple Catch Statements Throwing our own exceptions – Using Exceptions for Debugging.

UNIT V:

Introduction to Applets : How to Write Applets – Building Applet Code – Applet Life Cycle – Applet Tag – Running the Applet – Concepts of Streams – Stream Classes – Byte Stream class – Character Stream Class – Using Streams.

TEXT BOOK:

E.BALAGURUSAMY – “Programming With JAVA a Primer “ 3rd Edition TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**III**
Subject	**Core7 : Operating System**

Subject Description : This Subject deals with the Operating System.
Goal : : To learn about Operating System
Objective : On Successful Completion of this subject the students should have:
- Concepts , Process , Files , Dead Lock Etc.,

UNIT I:

History of Operating System - Operating system concepts – Process – Files -System calls The Shell - Operating System Structure - Monolithic Systems – Virtual Machines-Client Server model.

UNIT II:

Introduction to Process-Implementation of Process-Process States- Inter Process Communication- Race Condition - Critical Region - Mutual Exclusion - Sleep & Wakeup - Process Scheduling - Shortest job First-Two Level Scheduling

UNIT III:

Files – Structures – Type – Operations - Shared Files - Disk Space Management -The Security Environment - Generic Security Attacks - Design Principles For Security-User Authentication - Deadlocks - Deadlock Detection & Avoidance - Deadlock Prevention

UNIT IV:

Memory Management: Swapping - Virtual Memory - Memory Management without Swapping – Segmentation - Using MS DOS - MS DOS shell – MS DOS File System.

UNIT V:

Unix: Unix Goals- Interface to Unix-Process in Unix- Unix file system- Memory Management System Calls in Unix.

TEXT BOOK:

Andrew S. Tanenbaum - "Modern Operating System " -Eastern Economy Edition –PHI

REFERENCE BOOK:

D.M.Dhamdhere – " Operating Systems–A Concept Based Approach" 2nd edition TMH.
Milan Milenkovic-"Operating System " 2nd edition TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**III**
Subject	**Core Lab 3: Programming Lab - Java**

- Create an Employee Package to Maintain the Information about the Employee. Use Constructors to Initialize the Employee Number and Use Overloading Method to set the Basic Pay of the Employee. By Using this Package Create a Java Program.
- Program to Implement Polymorphism , Inheritance and Inner Classes.
- Java Program to Handle Different Mouse Events.
- Create an Applet for a Calculator Application.
- Java Program to Maintain the Student Information
- Animate Images at Different Intervals by using Multithreading Concepts.
- Program to sent a text message to another System and Receive the text message from the System.
- Java Program by using JDBC Concepts to Access a Database.
- Java Program to Implement RMI.
- Java Program by using to Implement the Tree Viewer.
- Java Bean Program to view an Image.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**III**
Subject	**Diploma 1 : Multimedia & its Applications**

Subject Description : This Subject deals with the Multimedia & its Application
Goal : : To learn about Multimedia
Objective : On Successful Completion of this subject the students should have:
- Media , Sound & Audio , Images , Animation , Video etc.,

UNIT I :

Introduction – Branch Overlapping Aspects of Multimedia Content – Global Structure – Multimedia Literature . Multimedia – Media and Data Streams – Medium .

UNIT II:

Sound/Audio : Basic Sound Concepts – Music –Speech , Images and Graphics : Basic Concepts – Computer Image Processing – Video and Animation : Basic Concepts – Television – Computer Based Animation .

UNIT III:

Data Compression : Storage Space – Coding Requirements – JPEG – MPEG – DVI , Optical Storage Media , Computer Technology – Multimedia Operating System.

UNIT IV:

Networking System : Layers , Protocols and Services , Networks , Metropolitan Area Networks , WAN , Multimedia Communication System.

UNIT V:

User Interfaces, Synchronization , Abstraction for Programming : Abstraction Levels – Libraries – System Software – Toolkit – Higher Programming Languages . Multimedia Application : Introduction – Media Population – Media Compos ion – Media Communication – Trends.

TEXT BOOK :

Ralf Steinmetz & Klara Nahrstedt – " Multimedia Computing , Communication & Applications " Pearson Education.

REFERENCE BOOK:

Fred T,Hofstetter – " Multimedia Literacy " – 3rd edition TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**IV**
Subject	**Allied 4:Management Information System**

Subject Description : This Subject deals with the MIS
Goal : : To learn about MIS
Objective : On Successful Completion of this subject the students should have:
- Management Role,Control, Process , DSS , BPR, Etc.,

UNIT I:

Introduction : MIS Concept – MIS Definition – Role of the MIS – Impact of the MIS – MIS and Computer. Role and Importance of Management – Introduction Approaches to Management – Functions of the Manager – Management as a Control System – Process of Management.

UNIT II:

Organization Structure and Theory – Strategic Management of Business : Basics of Management Information Systems : Decision Making – Information Systems.

UNIT III:

System Analysis and Design – Development of MIS – Choice of Information Technology – Applications of Management Information System – Decision Support Systems.

UNIT IV:

Enterprise Management Systems – Technology of Information Systems – Database Management Systems – Object Oriented Technology (OOT) : Conceptual Presentation – Client Server Architecture.

UNIT V:

Networks – Business Process Re-Engineering (BPR) – Data Ware House : Architecture to Implementation – Electronic Business Technology.

TEXT BOOK:

W.S.Jawadekar – " Management Information Systems " 2nd edition , Tata McGraw Hill.

REFERENCE BOOK:

Robert .Schultheis , Mary Sumner – " Management Information System" - 4thedition TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**IV**
Subject	**Core 8: Visual Programming(VB)**

Subject Description : This Subject deals with the Visual Programming.
Goal : To learn about Visual Programming.
Objective: On Successful Completion of this subject the students should have :

- Writing Programming ability on Visual Basic .

UNIT I:

Getting Started – Visual Basic Environment – Initial VB Screen – Single Document Interface – Tool Bars and System Control & Components – Use of File, Edit , View , Project , Format , Run and Debug , Tools , Window Menu , Properties Window , Procedures , Image Controls , Text Boxes , Labels , Navigating between Controls , Message Controls , Message Boxes and Grids.

UNIT II:

Steps in Programming – The Code Window – Editing Tools – Statements in VB – Assignment – and Property Setting – Variables , Numbers , Constants , Displaying Information – Controlling Program Flow – Repeating Operation – Making Decisions – GOTO – String Function – RND Functions – Data and Time Functions – Financial Functions.

UNIT III:

Control Arrays – Lists : One Dimensional Arrays – Array with More than One Dimension – Using Lists Functions and Procedures – Passing by Reference / Passing by Values – Code Module – Global Procedure and Global Variables – Documents for User Defined Types with Statements – Common Dialog Box – MDI Forms.

UNIT IV:

Fundamentals of Graphics and Files – Screen – The Line and Shapes – Graphics Via Codes , Lines & Boxes , Circle , Ellipse , Pie Charts Curves , Paint Picture Method – Graph Control – File Commands – File System Controls – Sequential Files – Random Access Files – Binary Files.

UNIT V:

Clip Board , DDE , OLE , Data Control – Programming with Data Control – Monitoring Changes to the Databases – SQL – Basics Database Objects.

TEXT BOOK :

Gary Comell – "Visual Basic 6.0 Programming"– Tata McGraw Hill Edition.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**IV**
Subject	**Core 9: Software Engineering**

Subject Description : This Subject deals with the Soft Ware Engineering
Goal : : To learn about Software Engineering
Objective : On Successful Completion of this subject the students should have:
- Design Process , Analysis Concepts , User Interface Design.

UNIT I :

The Evolving role of software – Software – Software Crises & Myths – Software Engineering : Layered Technology – The Software Process Model – Evaluating Software Process Models – Components Based Development – The Formal Methods Model – 4GT – Software Scope – Resources – Software Project Estimation – Decomposition Techniques – Empirical Estimation Models.

UNIT II :

Analysis Concepts & Principles : Requirement Analysis – Analysis Principles – Software Prototyping – Specification . Analysis Modeling : Data Modeling – Functional Modeling & Information Flow – Behavioral Modeling .

UNIT III:

Design Concepts & Principles : The Design Process – Design Principles – Design Concepts – Effective Modular Design.

UNIT IV:

User Interface Design : The Golden Rules – UID – Task analyzing and modeling – Interface Design Activities – Implementation Tools – Design Evaluation .

UNIT V:

Component Level Design : Structured Programming – Comparison of Design Notations . Object Oriented design : Design for Object Oriented Systems – the System design process – The Object Design Process.

TEXT BOOK :

Roger S Pressman – "Software Engineering a Practioner's Approach " 5th Edition,TMH.

REFERENCE BOOK:

Waman S.Jawadekar – "Software Engineering – Principles & Practice" – TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**IV**
Subject	**Core Lab4:Programming Lab - VB**

- Develop a VB Project to Check User Name & Password Given by User.
- Develop a VB Project to Add & Remove Items From List Box.
- Develop a VB Project to Copy all Items in a List Box to Combo Box.
- Develop a VB Project to Enter and Display Student Information.
- Develop a VB Project to Scroll Text from Left to Right Using Timer.
- Develop a VB Project to Mini Calculator Functions.
- Develop a VB Project to Documents typing using MDI Form.

Use Employee Information For the Following Projects.

- Develop a VB Project to Search a Record in MS-ACCESS database using data control.
- Develop a VB Project to Delete a Record From MS-ACCESS database using data control.
- Develop a VB Project to Perform following Operations in MS-ACCESS database using DAO . A). Move First Record B).Move Next Record C).Move Previous Record. D).Move Last Record.
- Develop a VB Project to Insert a Record in MS-ACCESS database using ADO.
- Develop a VB Project to Modify a record in MS-ACCESS database using ADO.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	**Diploma 2: Multimedia Lab – Using Photoshop/Flash/Macro Media**

- How to Create Sun Flower?
- How to Create Water Drops?
- How to Animate Plane Flying the Clouds?
- How to Create Plastic Surgery For Nose?
- How to Create Mouse?
- How to Create See thru text?
- How to Create Military Clothe?
- How to Create Stone Texture?
- How to Create Rollover Buttons?
- How to Create Realistic Stone Structure?
- How to Create Web Page?
- How to Convert Black and White to Color Photo?
- How to Create IceText?
- How to Create Realistic Blood Structure?
- How to Create Fog Effects.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**V**
Subject	**Core 10 : Relational Database Management Systems**

Subject Description : This Subject deals with the RDBMS
Goal : : To learn about RDBMS
Objective : On Successful Completion of this subject the students should have:
- Data Models, Structure, Transaction, Storage , SQL etc.,

UNIT I :

Introduction : Purpose of Database Systems – View of Data – Data Models – Database Languages – Transaction Management – Storage Management – Database Administrator – Database Users – System Structure . Entity – Relationship Model : Basic Concepts – Keys – Entity – Relationship Diagram – Weak Entity Sets – ER Features . Specialization , Generalization . Relational Model – Structure of Relational Databases – Relational Algebra – Views.

UNIT II:

SQL :Background–Basic Structure–Set Operations–Aggregate Functions– Null Values – Nested Sub queries – Derived Relations– Views–Modification of the Database–Joined Relations–Data Definition Language–Embedded SQL–other SQL Features .

UNIT III:

Integrity Constraints : Domain Constraints – Referential Integrity – Assertions – Triggers – Functional Dependencies. Relational DataBase Design – Pitfalls – Normalization Object Oriented DataBases : New DataBase Applications – Object Oriented Data Model – Object Oriented Languages – Persistent Programming Languages.

UNIT IV:

Object Relational DataBases : Nested Relations – Complex Types & Object Orientation – Querying with Complex Data Types – Creation of Complex Values & Objects – Comparsion of Object – Oriented & Object – Relational DataBases.

UNIT V:

New Application : Decision – Support Systems – Data Analysis – Datamining – Data Warehousing – Spatial and Geographic DataBases – Multimedia DataBases – Mobility and Personal DataBases – Information Retrieval Systems – Distributed Information Systems – The WWW.

TEXT BOOK :

Abraham Silberchatz,Henry F.Korth,S.Sudharshan–"DataBase System Concepts" TMH – 1997.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**V**
Subject	**Core 11: Artificial Intelligence**

Subject Description : This Subject deals with the Artificial Intelligence
Goal : : To learn about AI
Objective : On Successful Completion of this subject the students should have:
- Heuristic , Hill Climbing , Planning , Expert System etc.,

UNIT I :

The AI Problems – AI technique – Criteria for success – Define the Problem as a state space search – Production System – Characteristics – Problem Characteristics.

UNIT II :

Heuristic Search Techniques: Generate and Test – Hill climbing –Best First Search – Problem Reduction – Constraints Satisfactions – Means End Analysis.

UNIT III:

Knowledge Representation Issues : Approaches to knowledge Representation – The Frame Problem – Computable Functions & Predicates – Resolution – Procedural versus Declarative Knowledge .

UNIT IV:

Logic Programming – Backward Versus Forward Reasoning – Matching – Control Knowledge . Planning : Overview – Components of Planning System – Gal stal Planning – Hierarchical Planning – Reactive Systems.

UNIT V:

Expert Systems: Representing & Using Domain Knowledge – Expert System Shells - Explanation – Knowledge Requisition .

TEXT BOOK :

Elaine Rich and Kevin Knight – "Artificial Intelligence " Tata Mcgraw Hill 2nd edition 1991.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**V**
Subject	**Core 12: Client / Server Computing**

Subject Description : This Subject deals with the C/S Computing
Goal : To learn about C/S Computing
Objective : On Successful Completion of this subject the students should have:
- C/S Applications , GUI ETC.,

UNIT I :

Introduction to Client/Server Computing – What is Client/Server Computing – Benefits of Client/Server Computing – Evolution of C/S Computing – Hardware Trends – Software Trends-Evolution of Operating Systems – N/w Trends – Business Considerations..

UNIT II :

Overview of C/S Applications: Components of C/S Applications – Classes of C/S Applications – Categories of C/S Applications . Understanding C/S Computing : Dispelling the Myths – Obstacies – Upfront & Hidden – Open Systems & Standards – Standards – Setting Organizations – Factors of Success .

UNIT III:

The Client Hardware & Software : Client Component – Client Operating Systems – What is GUI – Database Access – Client Software Products : GUI Environments – Converting 3270/5250 Screens – Database Tools – Client Requirements : GUI Design Standards – Open GUI Standards – Interface Independence – Testing Interfaces .

UNIT IV:

The Server : Categories of Servers – Features of Server Machines – Classes of Server Machines – Server Environment : N/W Management Environment – N/W Computing Environment – Extensions – Network Operating System – Loadable Module..

UNIT V:

Server Operating System : OS/2 2.0 – Windows New Technology – Unix Based OS – Server Requirements : Platform Independence – Transaction Processing – Connectivity – Intelligent Database – Stored Procedure – Triggers – Load Leveling – Optimizer – Testing and Diagnostic Tools – Backup & Recovery Mechanisms..

TEXT BOOK:

Dawna Travis Dewire –"Client / Server Computing " – Tata McGraw Hill.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**V**
Subject	**AOS 1 : E-Commerce**

Subject Description : This Subject deals with the E-Commerce
Goal : To learn about E-Commerce
Objective : On Successful Completion of this subject the students should have:
- E-Commerce , E-Market , EDI , Business Strategies etc.,

UNIT I:

Introduction to E-Commerce : The Scope of E-Commerce – Definition-E-Commerce & the Trade Cycle – Electronic Market – Electronic Data Interchange – The Internet Commerce – The E-Commerce in Perspective. Business Strategy : The Value Chain – Supply Chains – Porter's Value Chain Model – The Inter Organizational Value Chain.

UNIT II:

The Introduction to Business Strategy – Strategic Implications of IT – Technology – Business Environment – Business Capability – Existing Business Strategy – Strategy Formulation & Implementation Planning – e-Commerce Implementation -Commerce Evaluation. The Inter Organizational Transactions – The Credit Transaction Trade Cycle. A Variety of Transactions – Pens & Things.

UNIT III:

E-Markets : Markets – E-Markets-Usage of E-Markets-Advantages & Disadvantages of E-Markets . EDI : Introduction – Definition - Benefits of EDI – EDI Standards – EDI Communication EDI Implementation – EDI Agreement – EDI Security.

UNIT IV:

The Internet : The Internet – The Development of the Internet – TCP/IP – Internet Components – Uses of the Internet – A Page on the Web : HTML Basics – Introduction to HTML – Further HTML – Client Side Scripting – Server Side Scripting – HTML Editors & Editing – The Elements of E-Commerce : Elements – e-Visibility – The e-Shop – On line Payments - Delivering the Goods – Internet e-Commerce Security .

UNIT V:

E-Business : Introduction - The Internet Bookshops – Grocery Supplies - Software Supplies and Support – Electronic Newspapers – The Internet Banking - The Virtual Auctions – Online Share Dealing – Gambling on the Net – e-Diversity.

TEXT BOOK :

David Whiteley–"E-Commerce – Strategy, Technology & Applications " Tata McGraw-Hill.

REFERENCE BOOK:

Jeffrey F.Rayport,Bernard J.Jaworski –" Introduction to E-Commerce" – 2ND EDITION TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**V**
Subject	**Diploma 3: ANIMATION TECHNIQUES**

Subject Description : This Subject deals with the Animation Techniques.

Goal : To learn about Animation.

Objective: On Successful Completion of this subject the students should have :

- 2D & 3D Animation , Script Animation , Motion Caption , Audio & Video Format etc.

UNIT I:

What is mean by Animation – Why we need Animation – Types of Animation 2D & 3D – Theory of 2D Animation – Theory of 3D Animation – Difference between Graphics & Animation – Application of 2D & 3D Animation – History of Animation – Software's.

UNIT II:

Traditional 2D Animation Concept – Types of 2D Animation – Techniques of 2D Animation – Color – Text – Formation – Size – Script Animation – Time Line Effects – Application of 2D Animation – Characterization 2D – Principle of 2D Animation – Concept Development.

UNIT III:

3D Animation & its Concepts – Types of 3D Animation – Cycle & Non-Cycle Animation – Theory of Character 3D Animation – 3D Transition Animation – Skeleton & Kinetic 3D Animation – Texturing & Lighting of 3D Animation – 3D Camera Tracking – Applications & Software of 3D Animation.

UNIT IV:

Motion Caption – Formats – Methods – Usages – Motion Capture Software – Merge with Software – Expression – Formats – Methods – Usages – Expression Capture Softwares – Script Animation Usage – Different Language of Script Animation Among the Software.

UNIT V:

Concept Development – Scripting – Story Developing – Output Formats – Audio Formats & Video Formats – Colors – Color Cycle – Color Formats – 3D Production Budjets – 3D Animated Movies – Fields in 3D Animation.

TEXT BOOK:

Joestadaro , Donkim – " Maya 6.0 Bible ".
Kelly Ldot Murtock – " 3DS Max Bible ".

Reference Book :

Tom Meade , Shinsaku Arima - " Maya 8.0 The Complete Reference " – Tata McGrawhill.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**V**
Subject	**Core Lab5: RDBMS LAB - ORACLE**

Study Features of Commercial RDBMS Packages such as ORACLE and Developers 2000. Laboratory Exercise should include defining scheme of applications , Creation of a DataBase , Writing SQL Queries to retrieve information from database . Use of host language interface with embedded SQL . Use of forms and report writer package . Some Sample Applications , which may be programmed are given below.

- Banking System Various Schemed
- On-Line Reservation System
- Personal Information
- Student Mark Processing System
- Hotel Management
- Stock Maintenance
- College Admission System

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	Core 13: **Software Testing**

Subject Description: This subject deals software testing concepts like unit-wise testing, integration testing and acceptance testing.
Goal: Knowledge on software testing and how to test the software at various levels.
Objective: To inculcate knowledge on Software testing concepts.

UNIT-I:

Software Development Life Cycle models: Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models. **White-Box Testing**: Static Testing – Structural Testing –Challenges in White-Box Testing.

UNIT-II:

Black-Box Testing: What is Black-Box Testing? - Why Black-Box Testing? – When to do Black-Box Testing? – How to do Black-Box Testing? – Challenges in White Box Testing - **Integration Testing:** Integration Testing as Type of Testing – Integration Testing as a Phase f Testing – Scenario Testing – Defect Bash.

UNIT-III:

System and Acceptance Testing: system Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing - Non-functional Testing – Acceptance Testing – Summary of Testing Phases.

UNIT-IV:

Performance Testing: Factors governing Performance Testing – Methodology of Performance Testing – tools for Performance Testing – Process for Performance Testing – Challenges. **Regression Testing:** What is Regression Testing? – Types of Regression Testing – When to do Regression Testing – How to do Regression Testing – Best Practices in Regression Testing.

UNIT-V:

Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process – Test Reporting –Best Practices. **Test Metrics and Measurements:** Project Metrics – Progress Metrics – Productivity Metrics – Release Metrics.

TEXT BOOKS:

SOFTWARE TESTING Principles and Practices – Srinivasan Desikan & Gopalswamy Ramesh, 2006, Pearson Education.

REFERENCE BOOKS:

Renu Rajani , Pradeep Oak –" Software Testing - Effective Methods , Tools & Techniques " – Tata McGraw Hill

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	**Core 14: Computer Networks**

Subject Description : This Subject deals with the Computer Networks
Goal : To learn about Computer Network
Objective : On Successful Completion of this subject the students should have:
- Mobile Communication, Wireless Transmission etc.,

UNIT I :

Introduction : Use of Computer Networks – Network Hardware – Network Software – Reference Models – Example of Networks.

UNIT II:

The Physical Layer : The Theoretical basis for data communication – Guided transmission Media Wireless Transmission – Communication Satellites – The Public Switched Telephone Network – Cable Television – Mobile Telephone System.

UNIT III:

Data Link Layer : Data Link Layer Design Issues – Error Detection and Correction – Elementary Data Link Protocols – Sliding Window Protocols – Protocol Verification – Example Data Link Protocols.

UNIT IV:

Network Layer:Network Layer Design Issues – Routing Algorithms – Congestion Control Algorithms – Quality of Service – Internet Working – Network Layer in the Internet.Transport Layer : Transport Service – Elements of Transport Protocol – A Simple Transport Protocol – The Internet Transport Protocols : UDP – TCP-Performance issues.

UNIT V:

Session Layer : Design Issues , Synchronization – Presentation Layer : Design Issues , Cryptography – Applications Layer : Design Issues , File Transfer , E-Mail.

TEXT BOOK:

Andrew S.Tanenbaum - " Computer Networks " 4th Edition PHI/Pearson Education.

REFERENCE BOOK :

P.Green – " Computer Network Architecture and Protocols " , Plenum Press 1982.
Godbols – " Data Communication & Networking " , TMH.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	**Core 15: Web Technology**

Subject Description : This Subject deals with the Web Technology.
Goal : To learn about web technologies
Objective: On Successful Completion of this subject the students should have :

- TCP/IP to Internet application architectures , EDI etc.,

UNIT I :

Internetworking Concepts , Devices , Basics , History and Architecture – TCP/IP – The Concept of IP Address – Address Resolution Protocol (ARP) – Reverse Address Resolution Protocol (RARP) – Internet Control Message Protocol (ICMP).

UNIT II :

Domain Name System (DNS) – Electronic Mail (EMAIL) – File Transfer Protocol (FTP) – Trivial File Transfer Protocol (TFTP) – A Brief History of WWW – Hypertext Markup Language (HTML) – TELNET Remote Login – Web Browser – An Introduction to Electronic Commerce.

UNIT III:

Introduction to Web Technology – Dynamic Web Pages – Active Web Pages – User Sessions in E-Commerce Applications.

UNIT IV:

Electronic Commerce Transaction Management – Electronic Commerce Security Issues – Online Security and Payment Processing Mechanisms .

UNIT V:

Electronic Data Interchange (EDI) – Extensible Markup Language (XML) – Wireless Application Protocol – Appendix : Online Shipping With ASP – Appendix: An Overview of Emerging Technologies.

TEXT BOOK :

Achyut S Godbole , Atul Kahate – " Web Technologies TCP/IP to Internet Application Architecture ." – Tata McGrawhill .

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	**AOS 2:Data Mining**

Subject Description : This Subject deals with the Data Mining
Goal : To learn about Data Mining
Objective : On Successful Completion of this subject the students should have:
- Matrices , Decision tree , Neural Network , Algorithms etc.,

UNIT I:

Basic Data Mining Tasks – Data Mining Versus Knowledge Discovery in Data Bases – Data Mining Issues – Data Mining Matrices – Social Implications of Data Mining – Data Mining from Data Base Perspective.

UNIT II :

Data Mining Techniques – a Statistical Perspective on data mining – Similarity Measures – Decision Trees – Neural Networks – Genetic Algorithms.

UNIT III :

Classification : Introduction – Statistical – Based Algorithms – Distance Based Algorithms – Decision Tree – Based Algorithms – Neural Network Based Algorithms – Rule Based Algorithms – Combining Techniques.

UNIT IV:

Clustering : Introduction – Similarity and Distance Measures – Outliers – Hierarchical Algorithms . Partitional Algorithms.

UNIT V:

Association Rules : Introduction - Large Item Sets – Basic Algorithms – Parallel & Distributed Algorithms – Comparing Approaches – Incremental Rules – Advanced Association Rules Techniques – Measuring the Quality of Rules.

TEXT BOOK :

Margaret H.Dunbam – " Data Mining Introductory and Advanced Topics " Pearson Education – 2003.

REFERENCE BOOK :

Jiawei Han & Micheline Kamber – " Data Mining Concepts & Techniques " 2001 Academic Press.

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	**Diploma 4: Animation Lab - Using Photoshop/Flash/Macro Media**

- How to Create Shapes and Drawings in Flash?
- How to Change a Shape to Another Shape? (Shape Animation)
- Create a Man to Walk with the help of Key Frame Animation.
- Draw a Bird with Flash tools and make it fly with key Frame Animation.
- Change the Colors of a Object with the Help of Animation.
- Animate a Ball with the help of Guide line Animation.(Path Animation)
- Create a Shining Stores with the help of Movie Clip.
- Create Buttons & Link with other Frames.
- Create a Album with the help of Buttons.
- Create a 3D Rotation of a Box with the Help of Shape Animation.
- How to Create Morphing between two images in FLASH.
- Create a Simple game with the help of Action Script.
- Make a new Mouse Pointer with the help of action script.
- How Import Pictures from Photoshop & Interlinked them.
- How we are give Password with the help of action script to a website?

BHARATHIAR UNIVERSITY , COIMBATORE – 46

COURSE	**B.Sc.,(Software System)**
Effective From	**2007-08 Onwards**
Semester	**VI**
Subject	**Core Lab 6: SOFTWARE TESTING LAB**

Write at least 10 TEST CASES for the following programs. Test cases can be for Input data, Conditional expressions, control transfer, output, etc. Run-Test-Debug- until all the test cases are in success status. Marks distribution as follows:

1. List of Test Descriptions (at least 10) for the Program. (20%)

2. Test Cases (40%)

3. Program with all test case results success (30%)

4. Record (10%)

TEST CASE Example:

Test-Id	Test Description	Test Steps	Expected Output	Actual Output	Status
TC-01	Acceptance of 10 digit input data	Input 10 Digit Number	Accepting 10 digit number	Accepted 10 digit number	Success
TC-02	Non- acceptance of character data	Input a character data 'X'	Character X should not be accepted	Accepting Character data	Failure

Modify PIC X(10) into PIC 9(10) and then run program for Test-id TC-02 again

TC-02	Non- acceptance of character data	Input a character data 'X'	Character X should not be accepted	Character data not accepted	Success
TC-03	Digit sum of 10 digit is in single digit	Output data	Single digit sum	Single digit Sum	Success

PRACTICAL LIST

1. Test the COBOL program: Finding the sum of individual digits of a 10-digit number until a single digit is produced.

2. Test the COBOL program: Accept the inputs student Name, Marks for five subjects and declare the result as PASS if the student gets minimum 40 in each subject otherwise declare the result as FAIL.

3. Test the COBOL program: Accept the date in DDMMYY format and display the result in the format 3rd APR 1998.

4. Test the C program: Sort and store the elements two arrays of integers into the third list.

5. Test the C program: Experiment the operations of STACK using array implementation.

6. Test the C program: Menu-driven option for QUEUE operations to perform the following:
    1. Insertion
    2. Deletion
    3. Modification
    4. List

7. Test the C++ Program: Palindrome string checking program. (using Pointers)

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Model Question Papers

CORE 6: JAVA PROGRAMMING

Time: 3 hours Marks: 100

SECTION-A (10*1=10) - Answer All Questions

1. The ____ of execution for a java application program is in a method Main()
   a). Starting point b).ending point c).both d). None.
2. The ___ is the escape sequence for a new line character .
   a). /t b). // c). /n d). None.
3. The use of the new operator coupled with a _____ method invocation to produce & configure a new object is normal practice.
   a). Constructor b). deconstruct or c). Operator d). None.
4. The _____ Statement cannot be used to determine action based on the value of a floating point object.
   a). Switch b). if-else c).case expression d). done.
5. The Scope of Variable response in the body of a _____ loop is limited to that body. a). for loop b). do while c). if-else d). none.
6. While Java Programmers tend to use a ____ method to produce a duplicate of an object. a) . clone() b). get value() c).equal() d). none.
7. The Individual values that make up an array are known as _____.
   a). elements b). variables c). array d). none.
8. If an exception occurs and an _____ code segment is in effect for that exception , then flow of control is transferred to the handler.
   a). Exception b). Exception handler c). Throws d). none.
9. The _____ keyword is used to prevent inheritance. a). final b). finalize c). finally d). abstract.
10. The number of parameters taken by draw line method is _____
    a). 1 b). 2 c).3 d). 4

SECTION B (5*6=30) - ANY 5 QUESTIONS

a. a). Define variable. How will you declare it? Explain with an example. (or)
   b). Explain type casting.

12. a). Write a program to print the following using for loop.

```
1
2  2
3  3  3
4  4  4  4
```

(or) b). Write a note on this operator.

13. a). Explain Interface (or)
    b). Write a program that creates an user-defined exception named my exception & throws it when the user enter a number greater than 10.
14. a).Discuss any Five Methods supported by File Class. (or)
    b). Explain : Draw Arc() & Draw Polygon().
15. a). Explain the Concepts of Streams (or) b). Explain the Applet with example.

SECTION C (5*12=60)

ANY 5 QUESTIONS

16 a). Explain the various OOP principles used in JAVA. (OR)
b). Discuss Integer Bitwise Operator.

17 a). What is entry controlled statement? Explain any two entry controlled statement with example.? (or)
b). Create a class named employee that accepts eno,ename and bp . Calculate DA,HRA,PF,LIC. Display eno,ename,bp,gross pay and net pay using objects.

18. a).Define Package . Explain the Various access specific available in Java with examples. (or)
b). Explain different ways of creating a thread with example.

19. a). Write a program to create a stack , to insert an element into a stack & to delete an element from an stack using vectors. (or)
b). Explain the Life Cycle of an Applet.

20. a). Explain Character Stream Classes & Stream Classes (or)
b). Explain the Exception Handling.

CORE 7: OPERATING SYSTEMS

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1. _____ is a program in execution a). Processor b). Job c). Process d). None.
2. A Scheduling discipline is _____ if , once the process has been given the CPU , the CPU cannot be taken away from the process. a). Preemptive
b). Non Preemptive c). Dependant d). Independent
3. The ____ generation computers had transistors. a). First b). Second
c). Third d). Forth.
4. The External Data Bus Connects the Memory with a CPU register called _____
a). Memory Address Register b). Memory Buffer Register
c). Table Address Register d). Table Memory Register
5. ____ time refers to the time taken to position the read/write head to the corresponding sector.
a). Latency b). Seek c). Access d). Delay
6. A Physical Record Contains _____ logical records. a).One b). 0 c).many d).2
7. Symbolic file directory contains _____ a). file # & name b).filename & BFD entry c). file name & access rights d). file name & location.
8. ISR refers to a). International Standard Regime b). Instruction Service Register
c). Instruction Service Routine d). Interrupt Service Routine.
9. _____ is related to the rate at which page faults occur . a).Swapping b). Paging
c). Demand Paging d). Thrashing.
10. Unix recognizes _____ types of files. A). one b). Two c). Three d). Four.

SECTION B (5*6=30)

ANY 5 QUESTIONS

11. a). Explain the use of program counter and stack pointers (or)
    b). What are the Functions of ALU.
12. a). What do you mean by Internal Fragmentation? (or)
    b). What do you mean by Thrashing.
13. a). Define DeadLock . Give an Example. (or)
    b). What is the use of Semaphores?
14. a). What is the Significance of Open/Close Operations on Files? (or)
    b). What are the contents of symbolic and basic file directories.
15. a). Explain the read system call in UNIX. (or)
    b). Explain the Fork system call in UNIX.

SECTION C (5*12=60)

ANY 5 QUESTIONS

16. a). What are the Services Provided by an Operating System ?. (or)
    b). Describe the Procedure Involved in Processing of Interrupts.
17. a). Explain the Method of Allocating Memory in Fixed Partitioned Memory Management. (or)
    b). Explain the LRU page removal algorithm by giving an example.
18. a). Explain the Concept of Multithreading (or)
    b). Explain the Round Robin and Priority based Scheduling
19. a). Explain Block Numbering Scheme in case of a Hard disk. (or)
    b). Explain how a record is read in case of a file system.
20. a). Explain Memory Management in Unix Operating System (or)
    b). Explain the Structure of I node in UNIX System.

Diploma 1: MULTIMEDIA & ITS APPLICATIONS

Time: 3 hours Marks: 100

SECTION-A (10*1=10) - Answer All Questions

1. _____ define a maximum end-to-end delay for each packed of a data stream.
   a) asynchronous transmission mode b) synchronous transmission mode c) both d) none.
2. if the time interval between two consecutive packets is constant a data stream is Called _____
   a) strongly periodic b) weekly periodic c) none d) both
3. Syntactical analysis provides additional decision help and the result is a _____
   a) recognized speech b) speech c) problem recognition d) none
4. The computer video format depends on the input and output devices for the _____
   a) motion video medium b) moving video medium c) motion video c) none
5. The aspect ration of the proposed HDTV images is 16/9= _____
   a) 1.888 b) 1.777 c) 1.999 d) none
6. _____ and backward data retrieval with simultaneous display should be Possible.
   a) slow forward b) fast forward c) medium forward d) none.
7. The _____ implementation should be independent of image size
   a) JEPG b) JGPE c) JPEG d) JGEP

8. The network layer transports information blocks called _____
   a) packets b) sockets c) datagram d) none
9. _____ is a high performance fiber optic LAN
   a) FDDI b) FDID c) CDDI d) none
10. _____ is a system entity required by task for manipulating data.
    a) resource b) process c) semaphore d) none

SECTION-B (5*6=30) - ANY 5 QUESTIONS

11. a). Explain about main properties of multimedia system (or)
    b) Explain about traditional data streams characteristics.
12. a) Explain about MIDI devices (or)
    b) Explain about Image transmission
13. a) Explain about JPEG (or)
    b) Explain about preemptive and non-preemptive
14. a) Explain about local area network (or)
    b) Explain about session management
15. a) Explain about media preparation (or)
    b) Explain about abstraction levels

SECTION-C (5*12=60) - ANY 5 QUESTIONS

16. a) Describe in detailed about medium (or)
    b) Explain about data string characteristics for continuous media
17. a) Explain about basic sound concepts (or)
    b) Explain about computer image processing
18. a) Explain about basic compression technique (or)
    b) Explain about resource management
19. a) Explain FDDI (or)
    b) Explain about quality of service and resource management
20. a) Explain video of the user interface (or)
    b)Explain about object oriented approaches

Core 8:VISUAL PROGRAMMING(VB)

Time : 3 hrs. Marks : 100

SECTION – A (10 * 1 = 10 Marks)

Answer All Questions

1. Forms and Controls in Visual Basic are called as ____.
   a). Table b).Chart c).Object d). Picture.
2. How many default toolbars does Visual Basic have ? a). 2 b). 3 c). 5 d). 4
3. Number of Forms available in Visual Basic Application
   a). 4 b). 3 c). any number d). 6
4. Which of the following are overridden by a variable?
   a). Public b). Private c). Both d).None
5. The Statement used to check Multiple Condiitons
   a). DIM b). IF c). ELSE d). ELSE & ELSE IF

6. ___ is Scope Variable. a). Local Scope b). Global Scope c). Module Scope d). all th above
7. _____ is used as common property for all objects in VB.
   a). Text b). Value c). Height d). Caption.
8. _____ box has path as the default property.
   a). Combo b). File List c). Check d). Directory List.
9. Number of Checkboxes available in VB___. a). 2 b).3 c). 1 d). 10.
10. Inbut Box contains _____ a). Title Bar b). Prompt c). Command Button d). all the above.

SECTION B (5*6=30)

ANSWER ANY FIVE QUESTIONS

11. a). Describe the Various toolbars in VB. (or)
    b). What are " Text Boxes"? Explain.
12. a). Explain " Assignment " and "Property" settings. (or)
    b). What are String Functions ? Explain.
13. a). Discuss the Importance of " Lists". (or)
    b). Describe the Method of using lists functions and procedures.
14. a). What does " Screen Scales" Mean? Explain. (or)
    b). State the Fundamentals of Graphics.
15. a). What is a Clip Board? Explain. (or)
    b). Explain the basics of SQL.

SECTION C (5*12=60)

ANSWER ANY FIVE QUESTIONS

16. a). What does " Navigating between Controls" mean? Explain. (or)
    b). Explain Message Box and Grids.
17. a). Discuss the Various Financial Functions. (or)
    b). What are Variable ,Strings and Numbers?
18. a). Explain Global Procedure and Global Variable. (or)
    b). What does "MDI" form mean ? Explain.
19. a). Discuss the Various Line and Shapes in VB. (or)
    b). What are File Commands? Explain.
20. a). Explain " OLE Objects & Data Control ". (or)
    b). Describe the Features of Database Objects.

Core 9: SOFTWARE ENGINERRING

Time: 3 hours Marks: 100

SECTION-A (10*1=10) - Answer All Questions

1. The Foundation for S/W Engineering is the _____ layer.
   a). Top b). Bottom c). Data d).Process.
2. ____ Changes the S/W to correct defects
   a). Corrective Maintenance b). Adaptive Maintenance
   c). Enhancement Maintenance d).Preventive Maintenance
3. The ____ is the final work product produced by the system and requirement engineer. a). Requirement Specification b). System Specification
   c). Requirement Analysis d). Requirement Elicitation
4. SCD Stands for a). Simple Context Diagram b). System Complete Diagram
   c). System Context Diagram d). System Collective Diagram.
5. ___is the degree to which a design method ensures that program components
   a). Decomposability b). Protection c). Compos ability d). Understandability.
6. A ___ abstraction is a sequence of instructions that has a specific and limited functions. a). Procedural b). Data c). Control d). None.
7. _____Provides a convenient transition from a data flow diagram to S/W architecture.
   a). Data Design b). Conceptual Design c). Architectural Design d). Structured Design.
8. _____ is the Primary Complaint for many interactive applications.
   a). Integrated help facility b). System Response time facility
   c). Variability d). Add-On-Help facility.
9. ____ is a set of activities that can be planned in advance and conducted systematically. a). Coupling b). Verification c). Testing d).Validation.
10. _____ techniques for internal program data focus on the definition of classes of objects. a).Inventory analysis b).Restructuring c).Document Restructuring d).Reverse Engineering.

SECTION B (5*6=30) - ANY 5 QUESTIONS

11. a). Write Short notes on S/W Process Model. (or)
    b). Discuss about the Generic View of S/W Engineering.
12. a). Write Short notes on System Modeling. (or) b). Describe about Data Dictionary.
13. a). Discuss about Design Principles. (or) b). Explain the Following : Cohesion & Coupling
14. a). Write short notes on Transaction Mapping. (or) b). Discuss about Testing Principles.
15. a). Discuss about Validation testing. (or) b). Write Short notes on Debugging Process

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SECTION C (5*12=60) - ANY 5 QUESTIONS

16. a). Define S/W Engineering ? Discuss about the Role of S/W. (or)
    b). Explain in detail about S/W
17. a). Discuss in detail about the Requirements Engineering Process. (or)
    b). Briefly Explain about the Concept of Data Modeling.
18. a). Explain in detail about the Design for Object Oriented Systems. (or)
    b). Discuss the Concept of System Design Process.
19. a). Discuss about Transform Mapping. (or) b). Explain the Control Structure Testing in detail.
20. a). Briefly explain about System Testing . (or) b). Explain in detail about CASE tools.

Core10: RDBMS

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1. A _____ is a collection of interrelated files and a set of programs that allow users to access and modify these files. a). DBMS b). RDBMS c). File System d). None.
2. _____ is the major disadvantages of file processing systems. a). Data Redundancy b). Data Inconsistency c). Data Isolation d). All of the above.
3. _____ is based on the tuple relational calculus. a). SQL b). Quel c). QBE d). Datalog.
4. A _____ consists of a collection of relations , each of which is assigned a unique name. a). Data b). Base c). Database d).Relational db.
5. If 'R' is a relational schema , the set of functions dependent of 'R' is denoted as ____. a). F+ b). F++ c). F(fn) d). F(d).
5. PJNF is also called _____. a). Third Normal Form b). Fifth Normal Form c). Multivalued Normal Form d). Domain – key Normal form.
7. _____ is the commercial version of the postgress db system. a). Illustra b). SQL-3 c). SQL d). XSQL.
8. _____ makes schema definition more natural. a). Data Hiding b). Polymorphism c). Inheritance d). All the above.
9. _____ databases store maps and associated information. a). Multimedia b). Spatial c). Mobile d). Normal.
10. _____ gather data from multiple sources under a unified schema , at a single site. a). Data Mining b). Data Warehousing c). Data Building d). All the above.

SECTION B (5*6=30)

ANY 5 QUESTIONS

11.a). What do you mean by Data Independence? What are the Two types of data independence? (or)
b). With a diagram explain relational model.

12.a). Discuss the FROM and WHERE clause of SQL with examples. (or)
b). Define the Concept of DUPLICATES in SQL.

13. a). Write a note on referential integrity. (or)
b). Discuss the Role of Triggers in SQL.

14. a). Discuss the Concept of Structured and Collection types. (or)
b). Explain the Concept of Inheritance with reference to Object-Relational Databases.

15.a). Write a note on Decision – Support Systems. (or)
b). Elaborate on Mobile databases.

SECTION C (5*12=60)

ANY 5 QUESTIONS

16.a). Discuss in detail transaction management (or)
b). With a Diagram explain Physical Data Model.
17.a). Explain the Various Parts of SQL. (or)
b). With examples , define the various Set Operations.
18.a). Discuss in detail Boyce-Codd Normal Form. (or)
b). Discuss in detail Object-Oriented Data Model.
19.a). Discuss in detail Complex types and Object Orientation with examples. (or)
b). Compare Object-Oriented and Object Relational Databases.
20.a). Bring out a detailed study on data analysis with examples. (or)
b). Discuss in detail with examples data mining.

Core 11: ARTIFICIAL INTELLIGENCE

Time : 3 hrs. Marks : 100

SECTION – A (10 * 1 = 10 Marks)

Answer All Questions

1. _____ is a Irrecoverable class of problem
   a). 8-Puzzle b). Water Jug Problem c). Chess d). All of these
2. _____ is a combination of both monotonic and partially communicative production system.
   a). Non-Monotonic b). Monotonic c). Communicative d). None of these.
3. In _____ , the computer is given a problem description and produces answer with no intermediate communication and explanation.
   a). Chess b). Playing Cards c).Solitary d). All of these.
4. The Generate and Test algorithm follows ,
   a). Breath First Search b). Best First Search c). Depth First Search d). None.
5. _____ is a flat area of the search space
   a). Ridge b). Local Maximum c). Plateau d). Both(b) & (c).
6. _____ search requires large memory to store all the nodes at each level
   a). Depth First b). Breadth First c). Both(a) & (b) d). None.
7. _____ method centers around the detection of difference between the current state and goal state.
   a). Problem Reduction b).Constraint Satisfaction c). Hill Climbing d). Means Ends Analysis.
8. In _____ , at the beginning of process , some down hill moves may be made
   a). Depth First b). Breadth First c). Simulated Annealing d). None.
9. ISA is being used to Show, a). Member Inclusion b). Object Inclusion c). Class Inclusion d). None.
10. _____ is also known as data driven problem solving system. a). Forward Reasoning b). Backward Reasoning c). Hill Climbing d). Means-Ends Analysis.

SECTION B (5*6=30)

ANSWER ANY FIVE QUESTIONS

11. a). Explain the Production System Classes. (or)
    b). List out the difference between Breath First and Depth First Search.
12. a). Explain the Simple Hill Climbing Procedure. (or)
    b). Explain the Heuristic Search.
13. a). List out the issues in Knowledge Representation. (or)
    b). Write a short notes on Inheritable Knowledge.
14. a). Write a Short note on Natural Deduction. (or)
    b). Translate the following sentences into prepositional logic:
    i. it is raining ii. It is sunny iii. It is windy
15. a). Explain the Forward Reasoning (or)
    b). Write a short notes on Declarative Knowledge.

SECTION C (5*12=60)

ANSWER ANY FIVE QUESTIONS

16. a) Analyze the 8-Puzzle Problem with respect to the Seven Problem Characteristics. (or)
    b). Discuss the Characteristics of the Problem.
17. a). What is Weak Method? Explain the Hill Climbing Procedure. (or)
    b). Explain AO* algorithm.
18. a). Explain the Different Approaches to represent the Knowledge. (or)
    b). Discuss the Issues in Knowledge Representation.
19. a). Briefly discuss the Natural Deduction?. Explain the Computable Functions & Predicates. (or)
    b). Write down the algorithm to convert a WFF into clause form.
20. a). Explain the Unification Algorithm (or)
    b). Write a short notes on Logic Programming? Briefly Explain the Matching.

Core12: CLIENT/SERVER COMPUTING

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1.Collection of interrelated data is called ----------
a)database b)record c)data d)all the above

2.CORBA stands for----------
a)common object requet broker architecture
b)continuous object request broker architecture.
c)common object request browser architecture.
d)none.

3.Extracting knowledge from large amount of data is called----------
a)datawarehousing b)data mining c)record d)none

4.--------- is a model in which each party has the same capabilities and either party can initiate a communication session.
a)peer to peer communication b)n/w c)n/w os d.none

5.DB2 is a sql product of--------
a)IBM b)Oracle c)Sybase d.MS
6.---------- is an OS for transaction processing
a)MOM B)SYNC c)ASYNC d)TPmonitor
7.The ---------- int the c/s environment is the repository of data for decision support processing
a)DSS b)OLTP c)Data warehouse d)EIS
8.Which one is an extended service?
a)IPC b)threads c)semaphore d)BLOBs
9.which management guarenties the ACID properties to all programmers
a)process b)transaction c)c/s d)database
10.---------is an non Gui clients that do not multitasking
a)robot b)testers c)ATM d)none.

SECTION B(5*6=30)

ANY 5 QUESTIONS

11.a)Explain about scalability? (or)
b) Explain about Flexibility?
12.a)Discuss about the Standards areas? (or)
b)Explain about the reliability?
13.a) Explain about the following 1)Client Software 2)Client Hardware (or)
b) Explain about the SQL interfaces?
14.a) Explain about the Extensions.? (or)
b)Explain about the Open Network Computing?
15.a) Explain about the Tape-Based Backups.? (or)
b) Explain about the Host – Based Backups?

SECTION C(5*12=60)

ANY 5 QUESTIONS

16.a)Describe in detail about Software Trends? (or)
b)Explain about Hardware Trends?
17. a)Explain about the Components of C/S Applications? (or)
b)Explain about the Classes of C/S Applications?
18. a)Explain the Client Operating Systems? (or)
b)Explain the database access?
19. a)Explain about n/w Computing Environment? (or)
b)Explain about Loadable Modules?
20. a)Explain about the Optimizer? (or)
b)Explain about Backup & Recovery Mechanisms

AOS **E-COMMERCE**

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1.---------- is a modern business methodology
a)E-commerce b)organization c)products d) Information's

2.The---------- is based on a set of standardized messages for the transfer of structured data
a) . data b) EDI c).data interchange d) none of the above.

3.---------- e-commerce used to replace telesales as a way of taking orders from business customers . a) internet b) Intranet c) email d) none of the above

4. ---------- the goal is to shorten the order-ship-bill cycle
a)Inventory management b)Ditribution management
c)Supplier management d)Channel management

5. Movies= Video +----------
a)Digital games b)video c)Audio d) none

6.---------- is not just agreed between the trading partners .
a)Standard b) national c) International d) none.

7.The node of which a link ends is called as----------
a)node b) refferend c) agent c) interaction

8.The---------- phase includes customer service support to address customer complaints , product returns and product detects
a)Post purchase interaction b)product c)customer d) none

9.Transaction involving financial instruments other than cash is called as ----------
a) process b)production c)retrieval d) none

10. ---------- parent process name or master agent name
a) supervisor b)owner c) agent d) none

SECTION B (5*6=30)

ANY 5 QUESTIONS

11.a)Explain the scope of E-commerce? (or)
b) Write notes on e-Markets?

12. a) Write note on Strategic Implications of IT? (or)
b)Write a note on Existing Business Strategy?

13. a) What is the advantage and disadvantage of e-Markets? (or)
b)Write notes on EDI?

14. a)Explain the Internet Development of the Internet? (or)
b) Explain Server Side Scripting?

15.a).Write notes on E-Business? (or)
b) Explain e-Diversity?

SECTION C (5*12=60)

ANY 5 QUESTIONS

16.a)Explain Internet - Commerce ? (or)
b)Explain Inter Organizational Value Chain ?
17 a) Explain the Business Environment & Capability? (or)
b) Explain the Credit Transaction Trade Cycle?
18.a) Explain the Markets & E-Markets? (or)
b) Explain Benefits of EDI?
19.a) Explain the TCP/IP ? (or)
b)Explain the internet components?
20.a) Explain Grocery Supplies? (or)
b)Explain the e-news papers?

Core 13: SOFTWARE TESTING

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1. _____ components of the testing strategy.
   a) Testing b) test phase c) test analyze d) none
2. _____ testing to verify the functions, particular period of time.
   a) control b) parallel c) requirement d) regression
3. which method used in identify risk?
   a) risk consultant b) risk checklist c) risk matrix d) all the above
4. _____ scripts to test when there are two or more users accessing the same file at the same time.
5. URL stands for _____
6. _____ appears in a column on the left side of the report
   a) time line b) report date c) project d) none
7. The project highlights appear in a _____ located at the bottom of the project.
   a) square b) polygon c) hexagon d) rectangular
8. SSL stands for _____
9. The _____ to be tested is input to the test process
   a) h/w b) s/w c) both (a) & (b) d) none
10. CGI stands for _____

SECTION-B (5*6=30)

ANY 5 QUESTIONS

11.a) Define S/W testing strategy (or)
b)Explain functional testing
12. a) Briefly about conduct a requirements walkthrough (or)
b) Explain any two Do procedures in acceptance test.
13.a) Explain monitor production (or)

b) Explain the overview of evaluate test effectiveness

14. a) Explain briefly about testing client/server systems (or)
    b) Distinguish between client server architectures and web based architecture.
15. a) Define test operational Fit (or)
    b) Explain data warehouse

SECTION-C (5*12=60)

ANY 5 QUESTIONS

16. a) Explain structural system testing (or)
    b) Explain functional testing
17 a) Briefly about program phase testing (or)
    b) Explain the following Do procedures
        i) build test data
        ii) analyze test factors
        iii) risk matrix
18. a) Explain three input test from report test results (or)
    b) Explain Do procedures in test S/W changes
19. a) Explain testing rapid application development (or)
    b) Explain testing the adequacy of system documentation
20. a) Briefly about testing in a multi-platform environment (or)
    b) Explain testing security

Core 14: COMPUTER NETWORK

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1. The Important uses of Computer Networks are.
   a). access to remote program b). access to remote database c). Communication Facilities d). all the above.
2. In any network the collection of machines intended for running user/application programs is called as _____
   a). Hosts b). Subnet c). Communication Subnet d). Channels
3. IMP Stands for
   a). Interface Message Providers b). Interface Message Processors c). Interface Message Protocols d). Interface Message Points
4. The Presentation layer is concerned with _____
   a).Token Management b). Synchronization c). Information Presentation d). Routing
5. The Number of Changes (1 or 0) per second measured in _____
   a).Current b). Voltage c). Sine wave d). Baud.
6. _____ coaxial cable is used for digital transmission.
   a). 25 Ohm b). 50 Ohm c). 75 Ohm d). 100 Ohm

7. In the Standards the modem is officially called _____ .
   a). PCM b). DPCM c). DTE d). DCE.
8. A Network using _____ techniques is called a store and forward network..
   a). Circuit switching b). Message Switching c). Packet Switching d). None
9. The Medium access sub layer is especially important in _____.
   a). LAN b). WAN c). LAN & WAN d). None
10. There are _____ key assumptions underlying dynamic channel allocation.
    a). 2 b). 3 c). 4 d). 5.

SECTION-B (5*6=30)

ANY 5 QUESTIONS

11. a). Write in detail the goals of Networks. (or)
    b). Write in detail the design issues for the layers.
12. a). Explain Broadband Coaxial Cable. (or)
    b). What are the two types of transmission technology in computer network? Explain.
13. a). illustrate any two types of framing methods in Data Link Layers. (or)
    b). Discuss CSMA/CD protocol briefly.
14. a). What is Routing Algorithms? Explain various classes of routing algorithm. (or)
    b). What are the Service Provided by the Transport Layer ? Explain.
15. a). What is Cryptography ? Discuss. (or)
    b). Explain in detail about Network Security.

SECTION-C (5*12=60)

ANY 5 QUESTIONS

16. a). With neat Block Diagram , describe in detail about OSI reference model. (or)
    b). Discuss briefly about the different types of service primitives.
17. a). Explain in detail about Fiber Optics (or)
    b). Explain the Various types of Switching.
18 a). Explain the Dynamic Channel Allocation in LAN & WAN. (or)
    b). Write short notes on Error detecting codes. & Error Correcting codes.
19 a). Write notes Two Adaptive Routing Algorithms . (or)
    b). Explain how RPC is implemented in Detail.
20. a). Write notes on E-Mail. (or)
    b). Explain Public Key Cryptography.

Core 15: WEB TECHNOLOGY

Time: 3 hours Marks: 100

SECTION-A (10*1=10)

Answer All Questions

1.The ---------- layer is responsible for node to node delivery of pockets.
   a) physical b) transport c) data link d) application
2. A routes must have at east ----------NIC'S
   a) 2 b)3 c)4 d)5
3. A home user dials into----------
   a)ISP b)NAP C) backbone d) routes

4. A---------- can understand multiple networking protocols
   a)repeater b) bridge c)router d) gateway
5. The header portion of an Ip datagram is ----------
   a) Always fragmented b) fragmented if required
   c) never fragmented d) none
6. The client does---------- a)active open b)passive open c) both d) none
7.---------- is a storage area to store emails
   a)Database b)file c)mailbox d)server
8. Web pages are created in the ---------- language
   a)HTTP b)WWW c)Java d) HTML
9. Frames ---------- make Web pages intertative
   a) do b) donot c)frame d)dynamic web pages
10.Each CGI request---------- process
   a) always uses the existing b) may or may not create a new
   c)always creates a new d)none

SECTION B(5*6=30 MARKS)

ANY 5 QUESTIONS

11. a) Describe TCP & UDP packet format briefly (or)
    b) Write short note on SMTP Server
12.a) Give the aspects of E-commerce (or)
    b) Describe supply chain management
13 a) Describe customer Relationship management (or)
    b) Explain static and dynamic web pages
14.a) Give short note on digital signature (or)
    b) Discuss XML basics
15. a) Explain 1) What is a web form (4)
   2) List out any two benefits of .Net (2) (or)
    b)Write an essay on online shopping explain with ASP pages

SECTION C (5*12=60)

ANY 5 QUESTIONS

16.a).Explain the Internet Topology Internet Architecture of an ISP (or)
    b) What are the features of TECP ? Discuss In detail
17.a) Describe supply chain management in detail (or)
    b) Discuss the concepts of E- Procurement models
18.a) Explain the concepts of credit card processing models (or)
    b) What is secure socket layer in detail
19.a) Explain EDI Architecture (or)
    b)What are the EDI application in business
20.a) Give an overview of .NET framework (or)
    b)Explain
   1)How do web services work? (10)
   2)Explain online shopping and online Database (2)

AOS 2 -DATA MINING

Time : 3 hrs. Marks : 100

SECTION – A (10 * 1 = 10 Marks)

Answer All Questions

1. What is KDD?
2. What can a Data Mining Tool do that SQL Can't?
3. State how the Integration of Data Mining in a Decision Support System is Useful?
4. Generally Data Mining algorithms Should not have a complexity that is higher than _____ .
5. Data Mining algorithms do not need a special form of storage . why?
6. State how genetic algorithms is used in data mining?
7. What is Clustering?
8. State , what is cleaning of data ?
9. Define Replication.
10. What is Transparency?

SECTION B (5*6=30)

ANSWER ANY FIVE QUESTIONS

11. a). Explain the Phrase , Information as a Production Factor . (or)
    b). Illustrate how data mining is useful in marketing.
12. a). Discuss the basic rules that govern the basic structure of a data ware house (or)
    b). Explain any two types of multiprocessing Machines.
13. a). Write a note on K-Nearest Neighbors. (or)
    b). Discuss about decision trees.
14. a). Write a note on Neural Networks. (or)
    b). Explain the different forms of knowledge.
15. a). Explain in brief to illustrate the embedded form of data mining. (or)
    b). Write a discussion on adaptive system management.

SECTION C (5*12=60)

ANSWER ANY FIVE QUESTIONS

16. a). Data Mining is a multi disciplinary field . Discuss (or)
    b). Explain the Practical applications of data mining.
17. a). Write a note on self learning computer systems. (or)
    b). Explain how the design of a decision support systems differ from that of an online transaction processing system.
18. a). Discuss the Knowledge discovery process in detail. (or)
    b). Explain the KDD process in detail with a suitable illustration.
19. a). Discuss Data Cleaning , Enrichment and Coding with an example. (or)
    b). Explain KDD Enrichment in detail.
20. a). Describe learning as compression of data sets. (or)
    b). Write a complete discussion on data mining primitives.