

SOLAPUR UNIVERSITY SOLAPUR.
B.C.A. – (Bachelor of Computer Applications)
(Under Commerce Faculty)

Objectives of the course:

This is a three years bachelor degree course in computer applications aimed at developing computer professional versatile in use of computers mostly in business world. The emphasis is to have generality of developing professionals as programmer, system analysts, database administrators, documentation officer etc.

Eligibility for Admission to B.C.A.

A candidate must have passed H.S.C. (10+2) in any stream or any Diploma (of minimum two years duration after 10th / S.C.C.) awarded by University/State Board in any technical or vocational stream.

Every eligible candidate has to appear for a common entrance test to be conducted spread over three years.

Medium

The medium of instruction and examination will be only English.

No. for students

A batch shall not contain more than 60 students.

Structure of the B.C.A. Course

First year B.C.A.

BCA Sem I

Sr No	Name	Total Marks	Uni Exam	Internal Evaluation
1	Fundamentals of Computer	100	80	20
2	Introduction to OS and Applications	100	80	20
3	Financial Accounting	100	80	20
4	Business Communication	100	80	20
5	Business Organization	100	80	20
6	Lab Course -1 Practical Paper-I based on Paper 1& 2 Practical Paper-II based on the topics in Paper 3 & 4 Through Accounting Package and Paper 4 Using MS-WORD, MS-POWER – POINT	100	-----	50 50
	Total	600	400	200

SEMESTER –II

Sr. No.	Name	Tota Marks	Uni Exam	Internal Evaluation
7	Procedural Programming through C. Language.	100	80	20
8	Database Management through MS-Access	100	80	20
9	Mathematics & Statistics	100	80	20
10	Financial Management	100	80	20
11	Principles of Management	100	80	20
12	Lab. Course-2 Practical Paper- I based on Paper 7 & 8 Practical Paper-II based on Paper 9 & 10	100	----	50 50
	Total	600	400	200

SEMESTER- III

Sr. No.	Subject	Total Marks	Uni Exam	Internal Evaluation
13	Systems Analysis and Design	100	80	20
14.	OOP with C++	100	80	20
15	File and Data Structures	100	80	20
16	Financial Services and Banking	100	80	20
17	Marketing Management	100	80	20
18	Lab. Course-3 Practical Paper-I based on Paper 14 &15	100		50
	Mini project based on the topics covered In Paper 16 & 17 -			50
		600	400	200

SEMESTER – IV

Sr. No.	Subject	Total Marks	Uni Exam	Internal Evaluation
19	GUI programming in Visual Basic	100	80	20
20	RDBMS and Oracle	100	80	20
21	Networking and Data Communication	100	80	20
22	Human Resource Management And Production Management	100	80	20
23	Entrepreneurship and Small Business Management	100	80	20
24	Lab. Course-4 Practical Paper-I based on Paper 19 & 20--Mini Project on topics covered in Paper 22 & 23	100		50
				50
	Total	600	400	200

SEMESTER –V

Sr. No.	Subject	Total Marks	Uni Exam	Internal Evaluation
25	Client Server Environment (VB as front end and SQL Server as back end)	100	80	20
26	Internet and Web Designing	100	80	20
27	E-Commerce	100	80	20
28	Software Engineering	100	80	20
29	Strategic IT Management	100	80	20
30	Mini Project (Website development using VB. Oracle and Hyper Languages- Software Design and implementation Expected.)	100	-----	50
			-----	50
Total		600	400	200

SEMESTER –VI

Sr. No.	Subject	Total Marks	Uni Exam	Internal Evaluation
31	VC—(Visual Technologies)	100	80	20
32	Recent developments in IT and Legal Aspects in Computer Field	100	80	20
33	Business Data Processing and Introduction to ERP and BPR	100	80	20
34	Development of Human kills	100	80	20
35	Lab. Course -5 Practical on Paper 31	100	50	50
36	Major Project Work	150	80	70
Total		600	400	200
Grand Total		3600	2400	1200

Details of Marks:

A)	Details of Internet Evaluation	
	Attendance	5 Marks
	Assignments	10Marks
	Mid-Test	5Marks
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	Total:	20 Marks

- B) Marks of Lab Course and Mini Project will be given by the concern college on the basis of evaluation by the internal teacher.
- C) Project Report and Viva-Voce:
Project report will be assessed by the internal teacher at the end of 6th sep. Out of 70 marks and there will be viva-voce examination of 80 marks. The panel of examiners will consist of one internal and one external appointed by the University.

D) REQUIREMENTS:a) **CORE FACULTY:**

First year	One Full Time Lecture and One Lab. Asst.
Second year	One Full Time Lecture and One Lab. Asst.
Third year	One Full Time Lecture and One Lab. Asst.

In addition to above contributory teachers may be appointed.

b) **Computer and facilities:**

First year	10 Computers
Second year	10 Computers
Third year	10 Computers.

Institute must have internet connection and networked lab with the software CDs that are present in the syllabus.

c) **Library facility:**

Library should have sufficient copies of the book (s) prescribed in the syllabus also computer journals should be subscribed.

E) **Fee Structure(Per Year)**

Tuition fees	-	Rs. 12,000
Development fees		Rs. 3000

		Rs 15000

B.C.A. COURSE

STANDARD OF PASSING:

A candidate must obtain minimum 40% of the marks in each University examination paper, internal evaluation, Lab courses Mini and major projects passing.

- i) Class will be awarded on the basis of the marks obtained by the candidate in all the six semester examinations.
 - ii) Candidate who has secured 40 percent marks in each head of internal credit and Semester Examination shall be declared to have passed in the paper.
 - iii) A candidate who falls in any particular theory papers shall be allowed to reappear for that theory papers. However, his/her internal credit marks shall be carried over.
 - iv) For admission to II semester, Candidate must clear at least four papers of Semester I.
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B.C.A.-I Semester-I Syllabus

Paper – 01: Fundamentals of Computer

1. **Introduction to Computer:** Computer characteristics of computer, concepts of hardware, software, firmware, Evolution of computer and Generations, classification and types of computers. Limitation of computer, Applications of computer in various fields.
2. **Structure of computer: Block diagram of computer** – Input unit, CPU- ALU, Memory unit and control unit, output unit. Introduction of motherboard, SMPS math co-processor, expansion slots, serial and parallel ports.
3. **Computer codes and Number system:** BCD, EBCDIC, ASCII, Number system, Decimal, Binary, Octal and Hexadecimal, Inter-conversion of number system, Binary arithmetic- addition, subtraction, multiplication and division.
4. **Input/Output Devices: Input Devices-** Keyboard, Mouse, Light pen, Joystick, Scanner, Graphic Pad, MICR, OMR, Bar Code reader, Digitizer, Touch Screen. Output Devices- VDU, Printers- Dot Matrix, Daisywheel, Ink Jet, Laser, Line (Chain and Drum), and Plotters.
5. **Computer Memory:** Memory Concepts, Semiconductor memory, magnetic memory-RAM, ROM, EPROM, EEPROM, Secondary Storage Devices-Magnetic Tape, Magnetic Disk (Floppy disk and Hard Disk), Compact Disk.
6. **Computer Languages:** Analogy with natural languages, MAACHINE language, Assembly Language, High Level Languages, Compiler, Interpreter, Characteristics of good languages.
7. **Computer Communication and Networks:** Computer communication, concepts, communication components, computer network, Topologies, Data Communication Channels, Protocols, LAN, WAN, Introduction to internet.
8. **Security and Safety of Data: Security-** Passwords and write protection. Safety- Periodic backup, protection from virus. Computer viruses- Characteristics, types, Detection and removing the viruses, Protection of Computer from virus and vaccines.
9. **Decision making while purchasing computer: Factors-** Type and size of business, need and benefits of computer, configuration of computer, Identifying suitable software and precautions while shifting from manual system to computer system.

Books Recommended –

1. Computer Fundamental – P.K. Sinha
2. Computer Today – -----
3. Computer Fundamental – V. Rajaraman
4. Computer Today – Donaid N. Sanders.

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Paper-02

Introduction to operating System and Applications

1. **Introduction:** Operating system, Evolution of Operating System, Types of Operating System. Function of Operating System – I/O management, Device Management, File management, Memory Management, Single user, Single tasking operating system, Single user multi tasking operating system operating system, multi user multi tasking operating system.
2. **Process Management:** Basic Concepts, Process Life cycle, a scheduling.
3. **Memory Management:** Introduction, Process Loading and Swapping memory allocation methods, Virtual paged memory (Mechanics of Virtual Memory) Protection and sharing- Limit registers, paging system segmentation.
4. **Input Output Management:** Organization of I/O Software and Hardware, objectives of I/O System, Structure of I/O System.
5. **File Management:** General Principles-File types, file identification, Directories, paths and paths name, Alias File names, volume concept, file management techniques- Allocation of file space, improving performance of disk system.
6. **Concurrent Process:** Basic Principles, deadlock-deadlocks examples, conditions for deadlocks, dealing with deadlocks, deadlock prevents, Avoidance and detection, inter process communication.
7. **Various Operating System:** DOS and Its features, Unix Operating System features- concept of kernel and shell programming, windows.

Books Recommended –

1. Operating Systems – Colin Ritchie.
2. Operating Systems Concepts – Godbole.
3. Operating System – J.P. Hays.

Paper-03 : Financial Accounting

1. **Financial Accounting:** Definition of Book Keeping and Accountancy, Need for accounting, Internal and External uses of Accounting, Accounting Concepts and conventions.
2. **Double Entry System of Accounting:** Journal Entries and Posting to ledger, Subsidiary Books. Bank Reconciliation Statement.
3. **Accounting Policies:** Inventory Valuation Policy- LIFO, FIFO, Simple Average and weighted Average Methods. Depreciation Policies- SLM, WDV- change in method of depreciation.
4. **Final Accounts**—Preparation of Final Accounts including adjustment, final accounts for sole proprietary concern, Format of Final account under company law.
5. **Accounting Software Packages**

Recommended Books –

1. Elements of double entry book keeping – Batliboi
2. Advanced Accounts – M.C. Shukla, T.S. Grewal and S.C. Gupta
3. An Introduction to Accountancy – S.N. Maheshwari.
4. Accounting for Management – S.K. Bhattacharyya & John Dea

Paper- 04: Business Communication

1. **Nature of Communications:** Definition, significance of Good Communication, Objectives of Communication, **communication Process** Type of Communication, Principles of Communication and barriers to communication.
2. **Communication in organization:** Nature, function, scope and limitation. Downward communication, upward communication, horizontal communication, purpose of constraints and limitation, psychological variables, personal variables, effectiveness of communication.
3. **Written Communication:** The process of formal written communication- the 'you' attitude, classify, conciseness, preciseness, style, flow, accuracy and readability. Mechanism of writing- Space and indention, use of equation, abbreviations, numerals, reference and access devices, capitalization, spelling, punctuation.
4. **Business Correspondence:** Business Correspondence in organization, Essentials, the layout, planning the letter, letter related to purchase, sales, business related inquiries, claims and adjustment letters, credit and collection letter, bank and insurance.
5. **Foundation of Effective Writing:** (AIDS)
Meetings- Kinds of meetings, the agenda, minutes of the meeting, paper work for regular meetings.
Report- Common features, routing reports and non-routine reports, steps in writing report.
6. **Oral Communication:** Giving speeches and oral presentation, preparing to speak, developing formal speech, extempore speech.
7. **Seminar:** Preparation for seminar, conducting seminar, organizing conference, writing and preparation of paper.
8. **Modern :- office Communication-** Electronic communication, Telephone, EPBAX, Teleconferencing, Answering Machine , E-mail , Voicemail, fax, internet

Notes –

1. The General approach will be to give broad idea of business communication.
2. Practical work will consist of – a. Letter writing,
b. Report writing, c. Arranging meetings and Seminars.
3. Every student will have to deliver in English language minimum two prepared speeches and one extempore.

Books Recommended –

Essentials of Business Communication – Rajendra Pal & L.S. -----

Business Communication – U.S. Rai & S.M. Rai.

Business Correspondence and Report Writing – R.C.-----

Paper-05: Business Organization

1. **Business** – Meaning, Definition, Scope- Changing concept and objectives of business types of business organization – sole Proprietor, Partnership, Joint Stock Company and co-operative Society. Concepts- Public sector, Private sector, Joint venture.
- 2 **Business Environment** – Meaning, Definition, Importance – Micro and Macro factors of environment – Internal and External environment of business- Merits and Demerits of study of business environment.
- 3 **Economic Environment** – Meaning, Nature, Economic Factors – New economic policy and its impact of business environment. Impact of Liberalization, Privatization and Globalization
- 4 **Technological Environment** – Features of technology – Impact of technology- Technology and Society – Technology and Economy- status of Technology in India.
- 5 **SERVICE SECTOR:** Insurance, Transport, Tele communication, Tourism (Important Features of these sectors and their present scenario).
- 6 **IT INDUSTRY :** Hardware Industry, Software industry and other segments of IT industry. Brief History of these industry and major players in India world.
- 7 **Global Environment** – Nature of Globalization, why do companies go global, How do companies go international. Benefits from MNC's and problems of brought by MNC's.

Books Recommended :

1. Business Environment – K. Aswathappa'
2. Business Environment – Freaneis Cherunilam, Himalaya
3. Management Policy and Strategic Management, R.M. Srivastava
4. Industrial Health and Strategic Management , A.M. Sarma
5. Business policy : Azar Kazani.
6. Corporate Planning – L.M. Prasad.

PAPER NO. 6
LAB COURSE –I

Practical paper- I: Lab Course on Paper 1

- 1) How do start computer?
- 2) How to shut down computer?
- 3) Linking of various peripherals.
- 4) Operation of all keys as key Board.
- 5) Mouse operation.
- 6) VDU-Variou adjustment.
- 7) Printer and Various options and its operations.
- 8) Searching of virus and removing of virus.

Practical paper- I: Lab Course on Paper 2

DOS:- Internal Commands-Date, Time, Dir, Copy, Del, Ren, Cls, Path, Type, Mkdir, Chdir, Rmdir, External Commands- Format, Find, Chkdisk Disk copy, Backup, Doskey

1. **Windows-2000:-** Starting Windows- Browsing Start Menu, Manipulating Windows- Moving, Resizing, Closing, Windows, Minimizing and Maximizing Windows, Working With Multiple Windows Using Windows Application. Using Word- Pad to create a document, entering text and saving the work. Using my computer- Changing the icon arrangement, To View the floppy disk. To manage fees, selecting one or more files, copying a file, delete a file, Drag and drop to move a file.
2. **File Management using Windows Explorer :-** To Copy, move and delete files, using copy and paste, using drag and drop, creating a folder. Creating a file to a folder, copying and moving the files between drives, renaming files and folders, find Program- To search by file name, by name, by date, by type, by specific text.
3. **Control panel:** - Changing date and time. Changing display, choosing a background, placing folder on desktop. Adding shortcuts to folder and creating shortcut.

Practical Paper –II: Lab course in Paper :- 3

1. **Computer Application Through Accounting Package Tally:-**
Creation of firm/company, group, ledger accounts, Feeling of accounting data- Receipt, Payment, Purchase, Sale, Contra, Journal, Credit Note, Debit Note.
2. **Inventory Information:** - Groups, items, Valuation.
3. **Reports and Final Accounts Generations –** Display and print.

Lab Course in Paper -4

1. Students should use MS-word package for Letters and Reports.
2. Student has to present one seminar with the help of transparencies. Student should use MS-Power-Point package for presentation.

PROCEDURAL PROGRAMMING THROUGH 'C'

UNIT 1: PROGRAMMING METHODOLOGY.

Algorithm: Definition, properties, developing well-known algorithms.

Flowcharts: Principles of flowcharting, Symbols, converting algorithms to flowcharts.

Pseudo code: Definition, programming constructs viz.sequence, selection iteration, and jump/go to Statement with label; different statement and expressions allowed in pseudo code.

Modularization: Concept, examples (4)

UNIT 2: GETTING STARTED WITH C: History, Character set, Keywords, identifiers variables, constants, symbolic constants. Data types Operators: Arithmetic relational and logical operators, assignment, bit-wise, size-of precedence and associatively, mixed mode expression conditional expression. Input, Output Functions.

(5)

UNIT 3: CONSTRUCTS: If-else, switch, loops- while, for, do-while, Break, continue exit statement, Go to and labels blocks. (5)

UNIT 4: FUNCTIONS: Definition, Declaration/Prototype, local and global variables, (10) scope rules, storage classes-auto, static, extern, register, recursion, Preprocessor, macros. (10)

UNIT 5: ARRAYS AND POINTERS: Arrays, multidimensional arrays, string, string (10) operations, pointers and addresses, array as pointers, pass by reference, dynamic memory allocation, pointer to pointer, address arithmetic pointer to function and array of pointers. (10)

UNIT 6: STRUCTURES AND UNIONS: Basics, passing structure to function array of structures, pointers to structures, union, nested structure self reference structure, union, typed, Bit fields. (8)

UNIT 7: FILES: Text and binary file, FILE structure, file operations command line (8) arguments.

Books Recommended:

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|----|--------------------------------------|-----------------------------|
| 1) | Let Us C - | Y.C. Kanetkar. |
| 2) | The C programming Language - | Ritchie and Kernighan. |
| 3) | Schaums Get line Series - | The C programming language. |
| 4) | Art of Computer programming Volume-I | Knuth. |

PAPER NO.8
DATABASE MANAGEMENT THROUGH ACCESS

- 1. DATABASE AND THEIR CONTEXT**
Database System and Evolution of Database Technology, database Management
(6) System Features.
- 2. DATABASE SYSTEM IN ORGANISATION**
Sharing data & database , planning , database & management control, database
(8) development.
- 3. DATABASE DESIGN**
Principles of conceptual database design, modeling conceptual objects physical
(8) objects.
- 4. THE RELATIONAL DATA MODEL**
Normal forms comparison of conceptual & relational data modeling.
(8)
- 5. RELATIONAL DATABASE IMPLEMENTATION**
Relational Algebra & calculus, implementation with SQL , using graphical Quer/
languages. (6)
- 6. CLIENT / SERVER DATABASE SYSTEM** (6)
Physical database systems.
- 7. MANAGING THE DATABASE ENVIRONMENT** (8)
Database administration and control, distributed database system , DBMS
selection and implementation . Evaluation of models and implementation issues.

Books Recommended

1. Database management & Design (2nd ded)
Garg W.H.Ansen, James V. Hansen, P.H.I
2. Database system concepts korth sllbers Chatz (2ned) (M.G.H)

PAPER-IX
QUANTITATIVE TECHNIQUES FOR MANAGEMENT

- 1) **Functions:** Variable, constant, random variable discrete & continues random variable

Meaning of functions, to find $f(x)$ if x is known, functions used in business and economics, demand functions, supply function, cost function, revenue function, profit function, Newton's divided difference formula for unequal interval to determine the form of a function
- 2) **Limits & Derivatives:** Meaning of limits, meaning of Derivatives, Working rules of derivatives, application of derivatives to business & economics –marginal cost, marginal revenue, maximisation & minimisation using second order derivative
- 3) **Determinants** - Meaning of determinants ,Evaluation of second & third order determinants , Cramers rule.
- 4) **Matrices** –Meaning of matrix, order of matrix, addition of subtraction & multiplication of matrices, unit matrix, transpose of matrix, equality of two matrices, adjoint of matrix, inverse of matrix, scalar multiplication of a matrix, Application of matrices in business
- 5) Mathematics of finance-interest calculation, annuity, present value of annuity.
- 6) Meaning of Central Tendency-concept of Mean, Median & Mode, problems only on Mean, Measure of Dispersion mean deviation about median, Standard deviation & Variance.
- 7) Correlation - Definition of correlation, Types of correlation Karl Pearson's correlation coefficient & its interpretation (continuous data be omitted)
- 9) Regression: Meaning of regression, least square method, linear & non –linear regression, explained & unexplained variations
- 10) Probability -sample space, event, probability, problems of probability, combination statements of additive & multiplicative laws of probability, dependant events, exclusive event, complimentary event, conditional probability (Definition of probability, distribution, Mean, S. D., p. d. f. of probability distribution.)

Note : Use of Calculator is allowed.
Examples based on Trigonometry to be avoided

Reference Books :

- 1) Business mathematics with applications: S. R. Arora . & Dinesh Khatter .
- 2) Fundamentals in Statistics : S.C. Gupta
- 3) Statistics for Management: Richard I. Levin & David S. Rubin .
- 4) Business Mathematics: Q. Zamiruddin & V.K. Khanna . S. k. Bhambri.
- 5) Business Statistics: S.J. Gupta & Indra Gupta.

PAPER NO – 10
FINANCIAL MANAGEMENT

1. **INTRODUCTION:** Finance Functions Decision making approach to finance function – profit maximization v/s wealth maximization, Time value of money.
2. **FINANCIAL ANALYSIS TECHNIQUES:** Comparative financial statements, Common-size statements trend analysis.
3. **RATIO ANALYSIS:** Ratio concept, importance of ratios, limitations of ratio analysis.

Types of ratios:

Liquidity ratios: Current ratio and Acid Test Ratio.

Profitability Ratios: Gross profit Ratio, Net Profit Ratio, Return on Assets, Return on Investment (network), and Return on Capital

4. **WORKING CAPITAL MANAGEMENT :** Concept of GWC and NWC, Operating Cycle of working/Capital, Determinants of working Capital, Calculation of working capital.
5. **COST- VOLUME PROFIT ANALYSIS :** Behaviors of Cost Fixed and Variable cost, Contribution, Profit Volume Ratio, Margin of Safety, Break Even Chart : Angle of Incidence, Decision making under CVP analysis (practical problems)
6. **CAPITAL EXPENDITURE DECISIONS:** Capital Budgeting, Importance of capital Budgeting Decision making under Capital Budgeting.
Techniques of Capital Budgeting: Traditional Techniques: Pay Back Period and Average Rate of Return Modern Methods: Net Present Value Method and Profitability Index method (Practical problem on basic concepts)

Books Recommended:-

1. Financial Management by Prasana Chandra
2. Financial Management by Khan & Jain
3. Financial Management by Sharma and Gupta
4. Portfolio Management by Samir K. Barua, J.R.Varma.
5. Securities Market in India by Avadhane.

PAPER NO- 11
PRINCIPLES OF MANAGEMENT

Introduction: Definitions of management, importance and scope of management, levels Management and its functions, Different Schools of thoughts of management. Managerial Process: Planning organizing, staffing, directing and controlling. Role of Manager in Organization: Decision making process: Nature and types of decisions

Planning: Meaning, importance of planning, types of planning and steps in planning process.

ORGANIZING: Organization Structure: Division of Work, Hierarchy, Departmentalization and Coordination Authority and Responsibility, Delegation of Authority.

STAFFING: Definition of staffing, Manpower Planning, recruitment, Selection Training& Development ,Performance Appraisal. Managing change through manager and organizational development.

MOTIVATION: Human factors in managing, motivation and motivators, special motivational techniques – Money, participation, quality of work life, perspective.

LEADERSHIP: Defining leadership, ingredients of leadership, styles of leadership, and traits of leader.

CONTROLLING: The basic control process, the critical control points and standards, control as a feedback system, controlling techniques and information technology

Books Recommended:

1. Essential of Management by Knootz & O Donnel.
2. Principles & Practice of Management by Geerge Terry.
3. Principles & Practice of Management by Tripathi C. Reddy.
4. Management a Global Perspective – Heinz Wehrich & Harold Knootz.
5. Essential of Management by Massie.

BCA II Sem III
B.C.A. Part – II

Paper No. 13
SYSTEM ANALYSIS AND DESIGN

Unit No.	Topics
1	System analysis and Design Overview- Meaning and Definition of system, difference between system and software, Business system concepts, characteristics, elements of system, types of system, subsystems, system development life cycle, feasibility study- Social, Technical, Operational and economic feasibility, Role of system analysis and users in system development
2	Techniques for knowing users requirement Observation, document searching, questionnaire, Interview
3	Charting techniques- Decision table, Decision tree, program flowchart, system flowchart, table of content
4	Process Design and Data Design – Data Flow Diagram – levels of DFD, Drawing DFD for library system, Bank Transaction processing system Entity Relationship Diagram – Concept of Entity, Attributes, Types of Relation, Drawing ERD for college system
5	System Implementation – System implementation and Maintenance, Hardware and Software selection.
6	Detailed Design – Input Design, Output Design, File Design, Dialogue Design, Process Design
7	Case Studies – Payroll system, Library system, Bank Transaction system, Stock maintenance system

References :

1. Basic System Analysis and Design – Alan Denial & Don Yeats
 2. System Analysis and Design – Davis W.S.
 3. System Analysis and Design – Edwards P.
 4. System Analysis and Design – Award E. H.
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Paper no.14
OOP with C ++

Unit no	Topics
1	The object Approach oriented Design Implementation in a object Oriented language ,Classes, objects, Encapsulation, Inheritance, Polymorphism, Dynamic binding, Message passing Benefits & application of OOP. Introduction to C++ What is C++ , Application of C++,A Simple Program, Stricter of C++ Program, Creating a source file ,Compiling linking ,C++ terminology –Token Keywords ,Identifiers, Basics data type s& Symbolic Constants type compatibility, Declaration of Variables. Dynamics initialization of variables ,reference Variables operation in C++ Scope resolution Operator
2	Object &Classes Introduction to structures ,A simple class , member functions , structure within structures, Nesting of function , Array within a class , Member allocation for objects, Array of objects, Simple function , Reference Arguments , Overloaded functions, in line functions ,Pure virtual function, Friend function Static function .
3	Constructors & Destructors Constructors & Destructors , Parameterized Constructor, Multiple Constructors in a class , Constructors with Default arguments, Dynamic initialization of Object, Copy Constructors , Dynamic Constructors , Destructors
4	Operators – Defining operator overloading, Unary & Binary Operators ,rules For overloading operators, Concatenating strings , Comparison operators , Arithmetic Assignments Operators , Type Conversion
5	Inheritance Derived Class & Base Class , Derived Class Constructors, Class Hierarchies, Public &Private Inheritance , Multiple Inheritance , Inheritance & program development .
6	Pointers The Delete & new operators , Pointers to object ,An Array of pointer to object , pointer to pointers , Debugging Pointers , difference Between pointer & References.
7	File Streams Streams , String I/O, Character I/O file Pointers , Error Handling , Redirection , Command Line Arguments, Printer output

Reference Book

- 1) Object Oriented Programming in Turbo C++ ----- Robert Lafore
- 2) Mastering C++ ----- Venugopal
- 3) Object Oriented Programming with C++ - ----- E. Balaguru Swami
- 4) C++ Programming ----- D Ravichandran

Paper No. 15

FILE AND DATA STRUCTURES

Unit No.	Topics
1	Introduction to Data Structure- Abstract data type, ADT for varying – length, Character string Data Structure & C.
2	Arrays Arrays as an ADT, one dimensional array, two dimensional array, multidimensional array, Character Suring array.
3	Sorting & Searching Sorting- Concept of sorting, Types of sorting- simple sort, bubble sort, Quick sort, Insertion sort and Radix sort, sorting applications Searching- Concept of searching, Linear search, Binary searching applications
4	Stack Definition of stack and examples, Representation of Stack, Infix, posttix, and prefix concept, Stack applications.
6	Queues Queues as an ADT, Implementation of Queues, Operations on queue, Priority queues, queues applications
6	Linked list- Definition, operation on linked list, linked list as a stack and queue, circular and Double linked list.
7	Tree- Binary Trees, Representation, Binary tree Travels, Threaded Binary trees, Tree operations, tree application

Reference Books

1. Data structure Using C and C + + by Langsam, Augenstein
2. Data structure through C by Dr. Sahani
3. Data structure through C and C by Jagtap

Paper – 16
FINANCIAL SERVICES AND BANKING

1. **Financial Services:** Meaning, classification, Scope, Fund based Activities and non Fund Based Activities, Recent Development in Financial Services, Challenges in Financial service Sector.
2. **Hire Purchase:**
Meaning, Characteristics, Parties to Hire Purchase, Concept, Steps in Hire Purchase, Evaluation of borrower, Schemes of Major financing companies- Auto Finance and financing of Consumer Durables, Its features and comparative Study, Introduction of Major companies in this field.
3. **Leasing:** Definition, Leasing, and Hire purchase , Steps in Leasing Transactions, Types of lease – Financial lease, operating lease, Leverage lease, Advantages and disadvantages of Lease, Problems of leasing services.
4. **Housing Finance:** Concept, Institutions in Housing finance Introduction to NHB, HUDCO, HDFC, LIC Housing Finance ICICI Bank. Various Schemes of Housing Finance, Features and comparative study .
5. **Insurance Service:** Concept, Categories of Insurance, Life Insurance- Major Life Insurance Policies and its features, Introduction of General Insurance Regulatory Authority- Functions, Introduction of LIC, GIC, and Private sector insurance companies.
- 6 **Banking:** Concepts, Functions of commercial Bank, Various types of Accounts fixed deposit schemes, interest calculation on deposits and Saving account. Loans and Advance – cash credit, term loan, repayment, and interest calculations recent developments in Banking sector – concept of E-Banking, ATM, Telebanking, mobile banking.
- 7 **Credit Card:** Meaning, terms of issues, Types of Credit cards, Parties to credit cards, operations through credit card, credit card v/s debit card, Benefits to card – card holders, Issuer, and Member establishment.

Books:

- 1) Financial Services- M.Y.Khan
- 2) Financial Sense- Prasanna Chandra
- 3) Marketing of Financial Services and Markets- V.A.Audhani
- 4) Banking and Financial System- S.N.Maheshwari & R.R.Paul
- 5) Indian Economy- Ruddar Dutta, & K.P.M.Sundaram
- 6) Financial Market and Services- E.Gordon & k.Natrajan

Websites of institutions mentioned in above syllabus.

Paper No 17
MARKETING MANAGEMENT

1. **Marketing Management** – Meaning and Definition of Marketing & Marketing Management, Role of Marketing in an organisation, Modern Marketing concepts. Functions of Marketing Management , Marketing in 21st Century.
2. **Marketing environment** – Micro and Macro environment of Marketing , analysis need and trends in marketing environment.
3. **Marketing of Goods and Services** – Classification of Goods, Agriculture and Industrial goods, and their Characteristics, Meaning and Characteristics of Services, Nature and Problems of Service Marketing.
4. **Marketing mix** – Meaning , 7Ps of Marketing Mix – Product, Price, Place Promotion , People, Place Process and Physical Evidence.
5. **Buying Behaviour** – Types of Buyers, Meaning and factors affecting Buyer Behaviour, Buying Motives.
6. **Management of Advertising and public Relations** – Meaning, definition, Media Selection, essentials of Good Advertisement, Evaluating, Evaluating Marketing effectiveness. Customer Relationship Management (CRM) – Meaning & concept.
7. **Marketing Research** – Meaning, Definition, Scope, Process of Marketing Research, Areas of Marketing Research.

Reference books

No.	Name of the book	Author	Publication.
1.	Marketing Management	Philip Kotler	Prentice Hall
2.	Marketing Management	Sherlekar	Himalaya
3.	Services Marketing – The Indian Perspective	Ravi Shankar	Himalaya
4.	Marketing of Services	Jha S.M.	Himalaya
5.	Fundamentals of Marketing	Stanton , Walker	
6.	Marketing Management	Ramaswamy & Namakumari	Himalaya

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Paper - 18
PRACTICAL PAPER – I

(BASED ON PAPER 14 AND 15 MINI PROJECT BASED ON THE TOPIC COVERED IN PAPER
16 AND 17)

A) 14. OOP with C++

1. Write Object Oriented Program in C++ to print given Series : $1! + 2! + \dots + 3!$
2. Write Object Oriented Program in C++ to print matrix calculations
3. Write Object Oriented Program in C++ to print Fibonacci Series
4. Write Object Oriented Program in C++ to read a set of lines and find out no. of lines, words, and Character in a given Text.
5. Write Object Oriented Program in C++ to store and display the information of the employees.
6. Write Object Oriented Program in C++ to print factorial of the given no. using copy, constructor and distruster member.
7. Write Object Oriented Program in C++ to print details of the students using friend function.
8. Write Object Oriented Program in C++ to use concepts of friends function class and exchange the student class object along with faculty class object by specifying faculty class in friend of student Class.
9. Write Object Oriented Program in C++ to perform operations of many string class initialization, concatenation , comparison, assign string.
10. Write Object Oriented Program in C++ to illustrate constant parameters, constant function and default argument concept.

B) 15. File and Data Structure.

1. Write a function add, subtract and multiply that read two strings of 0&1. representing binary integers and print the string representing their sum, difference and product respectively.
2. Write a Program to read & Print contents of an array. Find further frequency of each value within an array.
3. Write a program to do various arithmetic operations over matrices.
4. Write a C++ Program to convert user given expression in a following forms.
 - A) A Prefix Notation
 - B) A Postfix Notation.
 - C) Evaluate given expression
5. Write a Program to create a linked list, add node to linked list and remove node from linked list.
6. Write a Class Definition to implement a circular list.
7. Write a C routine build tree in which each node is visited only once.
8. Write a Program to sort an array using bubble sort techniques.
9. Write a Program to search given items within an array using simple sort.

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B.C.A. II
SEMESTER – IV
Paper 19 GUI Programming in Visual Basic

Unit No.	Topics
1.	Introduction to Visual Basic- Concept of GUI, Difference between Procedure Oriented Programming and Event Driven Programming, Starting and Exiting from VB environment, Understanding VB environment, windows Development, Strengths and weaknesses of VB. Project Explorer, Properties Window, Toolbox, Form, Layout window, Code Window, Property Pages, Getting Help, Saving Project, Printing Projects, Connectivity to Access.
2.	Naming Conventions, Variables & Data types – Byte, Boolean, Integer, Long, Single, Double, Currency, Decimal, Date, Object, String variable & fixed length, Variant with numbers and characters, User Defined Variables with Types, Scope of variables-Global, Local, Static., Constants
3.	Controls – Label and Textbox Controls, Command Button control, Frame, Checkbox and Option button controls, List box and Combo box controls, Drive list box, Directory list box, File list box. Msg. Box, Input box, Common Dialog box controls, Formatting controls, Control Arrays, Tab order.
4.	Functions – String functions, Mathematical function, Date functions, Data type conversion functions.
5.	Control Statements – If then else statement, select case statements. Do statement, For next statement, While statement, Exit Statement.
6.	Menu – The origin of Menu, Creating menus, Selecting fonts from menu. Adding code to menus, Adding Shortcut keys to menu.
7.	Report – Data form wizard, Data control, Data grid control, DB-combo box, Data Report, Error handling.

Reference Books :

1. Visual Basic 6.0 – Peter Wright
2. Peter Norton's Guide to Visual Basic – 6.0 – Peter Norton
3. Visual Basic 6.0 Programming – Hotzner Steven
4. Visual Basic – P.K. Macbride.

Paper No. 20
RDBMS AND ORACLE

Unit No,	Topics
1.	RDMBS – Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS, Introduction of Oracle, Historical Development of Oracle, Oracle configurations – OLTP, Data warehouse, Data mart, Vide server. Role & responsibilities of Oracle DBA, RDBMS Terminology – Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain. Codd’s Rules, Relational Model, Integrity Constraints. Functional Dependencies. Normal Form, Boyce-Codd Normal Form.
2.	Introduction to SQL – Features of SQL, Starting up Database, Logging on to SQL Plus, Data types. Classification of SQL Commands. SQL table creation, Integrity Constraints, Insertion of Records. Select statement, Alter Commands, Drop Table, Partitioned table. SQL – Operators – Transaction Processing, Where Clause, Like Operator. Between operator, Order by Clause, GROUP BY Clause, Having Clause. SQL Functions- Arithmetic functions, Conversion Functions, Miscellaneous functions.
3.	Sub queries and Join – Sub queries, Multiple sub queries, Nesting of sub queries, sub queries in DML commands, Correlated queries, comparison operators. Join – Equi Join, Simple Two Table Join Outer Joins, Self Join. Set operators. Views – Indexes, Sequences and Clusters, Create View, Advantages, Drop View, Creating Cluster.
4.	Introduction to PL/SQL – Difference between SQL and PLSQL, Block definition Structure, Block Functions -% , type, % Row type, % record type, IF ELSE statement, FOR loop, While loop, GOTO Statement. Functions – MAX, MIN, SORT, COUNT, AVERAGE.
5.	Concept of Cursors- Types- Implicit, Explicit open, Close cursor. Introduction to Triggers- Block level, Field level triggers, example to be solved with form.
6.	Forms – Basic concept of Form, Application development in Form, Creating a Form, Running a Form, Working with Master form, Maintaining standards in Forms – Master Detail Form, Libraries and Alerts. Menus – Using Default Menu, Using custom menu, Attaching a menu, Module to a menu, Opening a Form through a menu.
7.	Reports – Features of report, Defining data module for a report, specify Runtime parameter form for report.

Reference Books :

1. Commercial Application Development Using Developer 2000 –BY
 2. SQL- by Scott Urman
 3. Structured Query Language – by Osborne
 4. Teach yourself ORACLES – by Ed. Whalen.
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Paper No. 21
NETWORKING AND DATA COMMUNICATION

Unit No.	Topics
1.	Introduction to Computer Network – Advantages of network structure of the communications network, Point to Point and multidrop circuits data flow and Physical circuits network topologies and design goals. Types of topologies – Hierarchical topology, horizontal topology, Star topology, Ring topology. The telephone network switched and nonswitched options, The modern asynchronous and synchronous transmission.
2.	Types of networks – Wide area and local area networks, connection oriented and connectionless networks, classification of communication protocols.
3.	Layered Protocols and the OSI model – Goals of layered protocols, network design problems, communication between layers, Introduction to standard organizations and the OSI model standards organizations. Layers of OSI, OSI status.
4.	Local Area Network – Concept of LAN, Primary attributes of a LAN, Broadband and Baseband LANs, Connection options with LANs LAN topologies and protocols, Metropolitan Area Network concept.
5.	Switching and Routing in Networks – Message switching packet switching when and when not to use packet switching routing packet switching support to circuit switching networks.
6.	TCP/IP- Origin of TCP/IP, Architecture, Protocol Set Structure. Internet Protocol, User datagram protocol, Transmission Control protocol, Internet Architecture, TCP/IP Network Planning, Using Bridges, Identifying a Network connection, Planning the IP Address Scheme, Characteristics of IP Address. Network numbers and host numbers, working of TCP/IP. What ICP was built to do ? TCP/IP Application.

Reference Books :

1. Computer Network Protocols, Standards and Interface – by Black C.
 2. Computer Networks- By Tanoobaum A.S.
 3. Computer Today – S. Basandra.
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B.C.A. II
PAPER NO. 22
HUMAN RESOURCE MANAGEMENT AND PRODUCTION MANAGEMENT
Section –I (Human Resource Management)

1. **Introduction to H.R.M.** : Concept and Perspectives on HRM-HRM in Changing environment – Scope of IIRM.
2. **Recruitment and Selection** – Concept of recruitment – Recruitment policy and sources- Concept of selection – Selection process.
3. **Manpower Training and Development** – Concept and importance of training – methods of training – Concept of executive development.- Methods and techniques of executive development.
4. **Performance Appraisal** – Concept and Importance of performance appraisal – methods and techniques.

Section – II

1)Introduction to Production

Nature ,Scope, Importance Of Production Function
Types of Production system-job-shop, Batch, Mass, Continuous Production .
Lay out-Types of Lay out

2)Production Planning & Control

Concept, Importance, Objectives .Phases in PPC ,main Function of PPC

3)Inventory Management – Meaning and objectives – Inventory Management – ABC (Always Better Control) Analysis – VED (Vital, Essential and Desirable) Analysis – EOQ (Economic Order Quantity) Analysis, JIT, MRP

4) Quality Certification System- ISO 9000 &other Standards

References

1. Aswathappa, K., Human Resource and Personnel management, Tata McGraw Hill, New Delhi.
 2. Monappa, A. & Saiyadain, M., Personnel Management, Tata McGraw Hill, New Delhi.
 3. Mamoria, C.B. Personnel Management, Himalaya Publishing House, Mumbai.
 4. Dobler, D.W., etc., Purchasing and Materials Management. McGraw Hill, New York.
 5. Dutta. A.K., Integrated Materials Management, New Delhi.
 6. Aswathappa, K. & Shridhara Bhat K., Production and Operations Management. Himalaya Publishing House, Mumbai.
 7. Production and Materials Management. – k. Shridhara Bhatt Himalaya Publishing House,.
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Paper No. 23
ENTREPRENEURSHIP & SMALL BUSINESS MANAGEMENT

1. **Introduction:** Evolution of the concept of Entrepreneur, Entrepreneur v/s intrapreneur, Entrepreneur v/s Manager, Attributes and Characteristics of a successful Entrepreneur.
2. **Entrepreneurship and Environmental factors:** Economic, Social, Culture, Political, Legal, Demographic. Effect of these factors on Entrepreneurship.
3. **Small Scale Industry :** Definition, Characteristics of SSI, Role of SSI in Indian Economy. Importance of computer for SSI, Applications of Computers in SSI, Benefits of Computerization in SSI.
5. **Entry into Entrepreneurship :** Factors in deciding location and ownership, Steps in starting the Small Scale Industrial Unit.
6. **Project Report:** Format of Project Report, Economical, Technical and Financial Parts of Report, Prepare project report for starting Computer Institution, Internet Café, Dairy, Printing Press and Garment units.
7. **Problems of Small Scale Industries:** Production, Finance, Manpower, Marketing, Technical etc. Effect of Globalization on SSI in India.
8. **Successful Indian Entrepreneurs:** Bill Gates Narayan Murthy, Azim Premji,– Early age background, landmarks in their career, What qualities made them successful entrepreneur.

Reference Books:

- 1) Management of Small-Scale Industry – Vasant Desai.
 - 2) Small Business Management Fundamentals- Dan Steinhoff
 - 3) Entrepreneurship of Small-Scale Industry – Manohar U. Deshpande
 - 4) Industrial Entrepreneurship in India – V. Lakshmana Rao
 - 5) Small Scale Industry – Problems and Prospects – J.P. Sharma
 - 6) Feasibility Study – Dr. S.N. Bhattacharya
 - 7) Project Management and Entrepreneurship – Vasant Desai.
 - 8) Dynamics of Entrepreneurial Development and Management – Vasant Desai.
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Paper No. 24
LAB. COURSE – 4
PRACTICAL PAPER –I

(Based on Paper 19 & 20 Mini Project based on the topics covered in Paper 22 & 23)

a) 19, GUI Programming in Visual Basic

1. Program by using label box, text box and command button to enter student information.
2. Program to design mark list using option button, check box, combo box, list box etc.
3. Program by using horizontal scroll bar and vertical scroll bar for arithmetic operations.
4. Program to develop an application to change properties at run time only for various controls.
5. Design Menu driven program to convert number into hexadecimal, octal form.
6. Develop an application including functions and procedures.
7. Program to design calculator using array of controls.
8. Program to develop an application to handle multiple forms.
9. Design menu driven program to add record, delete record, modify the record in database file using message box, input box.

b) 20. RDBMS and Oracle

1. SQL statement for creation of table and insertion of data.
 2. SQL queries to UPDATE the table contents and queries.
 3. SQL statement for Oracle functions.
 4. SQL statements for creation of view.
 5. SQL statement for joining of two tables.
 6. SQL statement for creation of cursor.
 7. Creation of database Trigger.
 8. Creation of Alert.
 9. Creation of LOV.
 10. Creation of Menu.
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Paper 25: Client Server Environment

(Using VB and SQL Server)

1. **Introduction to Client – Server Environment**
Definition (Server Client), Role of Server. Function, Single ---- Two Tier & Multi Tier Architecture.
2. **Building Multi Tier Applications**
Building & Deploying Project Trucking System, Building Data environment.
3. **Building User Interface**
Defining Interface, Building Interface Code.
4. **Structured Query Language**
Table Creation and Manipulation, Data Types, Arrays Handling, Other Schema Object. Transactions Pattern and Ranges, Table Joins, Sorting and Grouping.
5. **Connection to SQL**
Connectivity using ADO, DAO, RDO.
6. **Overview of SQL Server**
Programs installed with SQL Server, Parts of Database and SQL Server Storage Concepts.
7. **Transact SQL**
Transact SQL Syntax and Conventions, Data types, Operators, Wild Cards, Variables, Functions. Executing TSOL, Advance Features of Transactions. Row set Functions. ----
8. **SQL Queries 10**
Basic SELECT Queries, Using Joins, Report Generation, Full text Searching, Linked Server, Queries. Action Queries (Delete, Update and Insert)
9. **View, Procedures and Triggers**
Use of Views, Understanding Stored Procedure, Understanding Triggers.

Books

1. VBC Complete References – Novel Treks (TMGH)
 2. SQL ----- SAMS Techmedia
 3. Mastering SQL Server 2000 – Mike Gunderloy (BPB)
 4. Mastering SQL – Grubbon (BPB)
-

Paper – 26: Internet and Web Designing

1. **The Internet: Technology Background**
 Evolution of the internet – 1961-2000, The Internet Key technology Concept – Packet Switching, TCP/IP, Client-Server Computing. Other Internet Protocols and Utility Program
 HTTP- Hypertext document, Sending E-mail-SMTP, POP and IMAP.
 File Transferring ETP, Telnet, Finger, Ping, Tracers and ISP.

2. **Designing Web Site:** The World Wide Web: Architecture of World Wide. Steps in Web development, Hypertext Market Languages- SGML, HTML, XML, HTML – Concept and version, Naming scheme for HTML, documents. ---- designing web page.

3. **HTML Elements**
 Head, Body, Script
 Text Formatting Tag The World While Web: Development of the web. Hypertext, Markup Languages – SGML, HTML, XML, Web Servers and Clients, Web Brower’s. (<H>, <I>, <H>, <Strike>, <S>, <TI>, <BIG>, <SMALL>, <P>, <CENTER>, <SUP>, <SUB>, , <DASEFONT>, <PRE>, <INS>, , <ADDRESS>, <BLOCKQUOTE>,
, <HR>) Order and Unordered List: Tags such as (<DL>, ,)
 Tables : <TD>, <TH>, <CAPTION>, Adding Links, Images and Background, <BGSOUND>, <HREF>, , Imagemap <MAP>, <AREA>, Frames : <Frameset>, <FRAME> cross Browser Testing

4. **HTML Form Building**
 Form Element : <INPUT>, <SELECT>, <TEXTAREA>, <LABEL>, Tab Navigation, Access Keys, Introduction to CSS.

5. **Introduction to Client – Side**
 Limitations of HTML, VB Script, JavaScript, Control Statement – IF-ELSE, Loop Structures (For, Do-White), Function Defining, Event Handles, Built- in functions and Validations. (10)

6. **Introduction to Server –Side**
 Asp- Advantages, Server Set-up for ASP (PWS/HS), Code – delimiters, 6 built in Asp objects, Loop Structure (For-Next), Control Structure (If-Else-Then),

Methods to get data from Clients (GET and POST), Difference between GET and POST, Introduction to Session objects and Cookies (10)

Books

1. HTML 4 understand – (SAMS Techmedia)
 2. Internet Complete – (BPB Publications)
 3. HTML, DHTML, JAVASCRIPT, COI, PERL – By Ivan Bayross (BPB Publishing)
 4. HTML 4.0 Platinum Edition
 5. Practical HTML 4 – Philips Lee Anne – Prentice Hall, New Delhi.
 6. The Internet Book – Douglas E. Corner – Pretice Hall, New Delhi.
 7. Bridge to the Online storefront – Agarwala Kamlesh & Agarwal Deeksha (Macmillan India)
-

Paper 27 E – commerce

1. E – commerce – concepts, E-Commerce Practice Vs Traditional Practice, benefits of E – Commerce to Organisation, consumers and Society limitations of E – commerce.
2. Types of E – commerce – B2C, B2B,C2C, P2P
Major business to Consumers (B2C) Business Models: Portals, E –tailer, Content Provider, Transaction broker, Market creator, Service Provider, Community Provider.

Application in B2C – E – banking ,E – Trading , E – Auction (Introduction And overview of these concepts)
3. Application in B2B – major Business to Business (B2B) Business Models - E-distributor, B2B Service provider, Metal maker , Benefits of B2B on procurement , Just in time Delivery .

Consumer to consumer (C2C) Business models – Peer to Peer (P2P) Business Models.
4. Building an E- commerce Website –
Planning – The system development life cycle, system Analysis – Identify Business Objectives. System functionality and information requirements. System design – Hardware and Software Platforms. Building the system – Inhouse Vs Outsourcing. Hosting , Testing the system, implementation & maintenance.
5. Security & Encryption
The E – commerce security environment – dimension of e-commerce Security. Security threats in E – commerce environment – Malicious Code Hacking, Credit Card Fraud, Spoofing Denial of services (DoS) Attack, Sniffing.

Technology solutions – Protecting internet Communication, Encryption, Securing Channels of Communication, Secure socket layer (SSL), Protecting Networks, firewalls and Proxy Servers, Protecting Servers & Clients.
6. E – commerce Payment Systems
Digital Wallets, Digital Cash, Online stored value systems, Digital Accumulating Balance Payment systems, Digital Credit Card Payment Systems, digital Cheque Payment System.
7. E – Commerce and India – Overview of E – commerce in India.

Books –

Sr. No	Name of the book	Author	Publication
1.	E – Commerce	Keneth C. Loudon & Carol G. Traver	Pearson
2.	E – commerce – The cutting Edge of business	Kamalesh Bajaj & Debjant Nag	Tata McGraw
3.	E – Commerce – Strategy, Technology & Application.	David whiteley	Tata McGraw
4.	E – commerce – concepts , models & strategies.	C.S.V. Murthy	Himalaya
5.	E – Commerce	Mathew Rergnolds	Worx Publishing.

Paper – 28: Software Engineering

1. **Introduction to Software Engineering**
The Software problem, Software Engineering. The Software Engineering approaches
2. **Software Process**
S/workers process Models, Software Specification, Design and Implementation, Validation Evolution.
3. **Software Requirement**
Functional and nonfunctional requirements, User requirements, System requirements, Software requirement document
4. **Software Prototyping**
Prototyping in Software process, Rapid prototyping techniques, User Interface prototyping
5. **Real Time Software Design**
System Design, Real- Time Executives, Monitoring and Control System, Data Acquisition Systems
6. **Design with reuse**
Component based Development, Application Families and Design Pattern
7. **Verification and Validation**
Planning, S/W Inspection, Automated Static Analysis, Clean room S/W development.
8. **Software Testing**
Defect Testing, Integration Testing Object – Oriented Testing, Testing Work Benches (6)

Books

1. Software Engineering –
 A Practitioner’s Approach by Roger Pressman (MGII)
2. Software Engineering –
 By Ian Sommerville (Pearson Education)

Semester – V
Paper No. 29 Strategic IT Management

- I. **Strategic Management** – Definition, Levels of Strategy, Strategic Management Process- Mission- Objectives – Strategic Business Unit- Organizational, Appraisal, External Environment Appraisal- Strategy Alternative – Strategy Choice- Strategy Implementation- Project Implementation- Procedural Implementation- Resource Allocation- Structural implementation – Functional Implementation- Behavioral Implementation- Strategy evaluation.
- II. **Strategy Planning** – Mission, Purpose, Business Definition and Objectives. Environmental Appraisal – Components of Environment, Organizational Appraisal- Organizational capability factor. Methods and Techniques for organizational appraisal.
- III. **Strategic alternative** – Grand strategy- Modernization, Diversification, Integration, Merger, Takeover, Joint venture, Turn around, Divestment and liquidation and combination strategy.
- IV. **Strategy Choice-** Process of Strategic Choice- Corporate Portfolio analysis- Industry competitor and SWOT analysis.
- V. **Strategy Implementation-** Project Implementation- Procedural Implementation- Resource Allocation.
- VI. **Structural Implementation-** Structural consideration- Structures for strategies- Organizational Design and Change- Organizational System.
- xiii. **Strategic Evaluation and Control-** Nature, Importance, Barriers in evaluation. Strategic Control, Premise Control, Implementation Control, Strategic Surveillance Special Alert Control.

Books-

1. Business Policy- Azar Kazmi
 2. Corporate Planning – L.M.Prasad
 3. Strategic Management- Formulation, Implementation and Control, Pearce II J.A. and Robinson R.B. Irwin
 4. Strategic Management and Business Policy – Entering 21st Century Global Society, Whellen T.L. and Hunger J.D. Addison Wesley.
 5. The Paradox Principles- How High Performance Companies Manage Chaos, Complexity and Contradiction to Achieve Superior Results. The price Waterhouse change Integration Team, Irwin.
 6. Competing for the future, Hamol G. and Pralhad C.K., Harwad Business School Press.
-

Paper – 30 Mini Projects

Website development using VB, Oracle and Hyper Languages, Software Design and implementation expected. The student should prepare the project report on the basis of applications in functional management which are covered in SEM -III and IV.

Paper No. 31: VC++ (Visual Technologies)

1. Introduction to Windows SDK
2. Introduction to resources, cursor, bitmap, string table, dialog, accelerator, icons, menus, versions, toolbar.
3. Detail study of following classes:
Cobjects, Cwinapp, Cdocument, Cview, Cmainframe, Cwin, Cdoctrernplte, Cmultidocternplate.
4. Document view architecture: specialization, document template
5. Modal, Modal less dialog boxes, creating help for applications
6. Making DLL with MFC, multithreading through MFC
7. COM, DLE automation. OLE uniform data transfer, clipboard transfer and drag-drop. OLE structured storage, OLE embedded server and container
8. Macros: Runtime class, declared dynamic, implement dynamic and declare-dynacreate. Implement-dynacreate declare-serial, implement-serial
9. Creating Active X object: using Active X object in program
10. Debugging tools: SPY, PVIEW, MFC Tracer
11. Visual SourceSafe, project managent.

Books

1. Using VC++ Paul Pern, Chris Corry, Chane Cullens
2. inside VC++ David J., Kruglinski
3. Programming Windows 95 Chartes Petzold (MS press 1995)

Paper 32: Recent Developments in IT

Computer hardware

Introduction to microprocessors features of Pentium series.

1. Study of various cards in a computer, study of cables like RS. 234, connectors, hub, switch, router, gateway, Developments in monitor, keyboard, mouse and other devices.
2. Introduction to Operating system: Linux Features
3. Mobile computing – Introduction to wireless communication, need and application, market for mobile.
Communication, mobile and wireless devices, wireless LAN, infrared and radio transmission and Bluetooth.
4. Artificial Intelligence
Definition of artificial intelligence, problem solving methods, knowledge representations using predicate logic, advanced problem solving systems
5. Legal Aspects of IT – Jurisdiction in the cyber world, Cyber crimes, Features IT Act 2000
Protection of Cyber Consumers in India.

Books :

1. Multimedia – Marketing it work-Tay Vaughan (TMG 4th edi.)
2. Artificial intelligence – Alain Rich (MGH)
3. Microprocessor architecture, programming and applications – Gaonkar.
4. Microprocessor family – Liu Gibson
5. Mobile communication – Schiller
6. Cyber Las Simplified – Vivek Sood (Tata McGraw – Hills)

Paper 33: Business Data Processing and Introduction to ERP AND BPR

1. Enterprise Resource Planning: Evolution of ERP, early ERP, packages, ERP products and markets.
2. Opportunities and problems in ERP selection and implementation
 - ERP implementation – Identifying ERP benefits, team formation.
 - Consultant intervention, Selection ERP, Process of ERP
 - Implementation, Meaning benefits of ERP.
3. Business Systems and ERP – Different ERP modules.
4. An overview of the ERP market & Careers in ERP.
5. Business Process Reengineering:
Reengineering concepts – The emergence of reengineering concept, concept of business process, rethinking of process, Identification reengineering need, preparing for re-engineering, implementing change.

Books

1. Enterprise Resource Planning – Leon (Tata McGraw Hill)
 2. ERP Demystified – By Alexis Leon
 3. Reengineering the Corporation – Micheat Hammer and Jamts Chamby.
 4. ERP-A Managerial Prospective – S. Sadagopan (Tata McGraw Hill)
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B.C.A. III SEM- VI
PAPER – 34
Development of Human Skills

Basics or Human Skills :

Introduction to Human Skills, Types of Human Skills- reading, writing, learning, listening. Basic abilities- muscular, sensor, mental, social and conceptual. How skills are gained.

Self Discovery and Behavior :

Journey of Self Discovery- Analysis of strength and weakness. Goal setting to overcome weakness, Learning through reinforcement. Learning through feedback, learning by observing, learning through experience, individual Behavior and process- Thinking, memory, learning, emotions, intelligence and ability.

Human Attitudes & Values :

Attitudes-Meaning & Definition, Features. Formation of Attitudes, Functions of Attitudes Values-Meaning & Definition, Formation of Values, Types of Values (Mr. Milton Rokeach's Classification) Five universal values, Truth, Righteous conduct, peace, love and non violence and their sub values.

New skills in Management :

Creative style – emotional intelligence- leadership skills, work style, sales competencies, sports mental skills, stress management, team role skills, critical thinking skills, computing skills.

Skills development :

Decision making skills, Analytical skills, Methods used to develop decision making skills- in basket, business games, case studies.

Interpersonal skills, Methods used to develop interpersonal skills. Role playing, behavior modeling, sensitivity training, transaction analysis, structured insight.

Utilization of skills :

Career Management, Basic career anchors- creativity, fictional competence, Managerial compliance. Factors affecting career choices, roles in career development.

Career in Computer Field :

Operators, programmers, system Analyst, Project Manager, Consultant.

Reference Books :

- 1) Modern business Vol. III, Personnel Management, A.C. Croft
 - 2) Education to human values – Tilak Raj Bhardwaj, A. Mittal Publication
 - 3) Web. Site: [http://etesting. Moddwest.com](http://etesting.Moddwest.com)
 - 4) Personnel Management – Edwin Filppo, McGraaw Hill International Editions.
-

Paper 35 Lab Course

- 1) Develop a program using VC++ to study various system resources using text editors.
- 2) Develop a program using VC++ to create student record using menus and dialog boxes.
- 3) Develop a program illustrating the use MFC
- 4) Develop a program for handling different messages in MFC
- 5) Develop a program for drawing a line using mouse.
- 6) Develop a program to design calculator
- 7) Develop a program to create and use Active X object.

Paper 36 Major project Work

A group of 4 to 5 students prepare a major project under the guidance of internal teacher. Project report will be evaluated by the internal teacher out of 70 marks and these will be viva-voce examination for 80 marks. The panel for Viva-voce examination will be appointed by university.
