VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED
Year- 2019-20   Term- I[st]
Name of teacher- Mr. V. B. Pujari   Department- B.C.A.

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A.- I Sem-I	Programming in C Part-I	**Problem Solving Methods:**Problem definition, Steps in Problem Solving (Define Problem, Analyze Problem, Explore Solution). ALGORITHM: Definition, notations, characteristics of algorithm, examples on algorithm. FLOWCHARTS: Definition, features of flowcharts, symbols, examples, coding, running, debugging-types of errors (syntax, logical, runtime errors.)	Problem Solving Methods:Problem definition, Steps in Problem Solving (Define Problem, Analyze Problem, Explore Solution). ALGORITHM: Definition, notations, characteristics of algorithm, examples on algorithm. FLOWCHARTS: Definition, features of flowcharts, symbols, examples, coding, running, debugging-types of errors (syntax, logical, runtime errors.)	......	
		Introduction to c: History, features of c language, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators, Concept of operator Precedence & Associatively. Comments-types of comments, Use of Comments, Header Files(conio,stdio,string,math). Structure of C Program, Input and Output Functions.	Introduction to c:History, features of c language, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators, Concept of operator Precedence & Associatively. Comments-types of comments, Use of Comments, Header Files(conio,stdio,string,math). Structure of C Program, Input and Output Functions.	......	
		Control Structures: Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, do...While loop, Unconditional statements: Break, continue, exit, goto statements.	Control Structures:Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, do...While loop, Unconditional statements: Break, continue, exit, goto statements.	......	
		Arrays and Strings:Arrays: Meaning and definition, Declaration, Initialization and types of arrays (single and multidimensional arrays). Strings: Meaning and definition, Declaration, Initialization String functions strlen(), strrev(), strlwr(), strupr(), strcat(), strcmp() , strcpy(). Handling of character array.	Arrays and Strings:Arrays: Meaning and definition, Declaration, Initialization and types of arrays (single and multidimensional arrays). Strings: Meaning and definition, Declaration, Initialization String functions strlen(), strrev(), strlwr(), strupr(), strcat(), strcmp() , strcpy(). Handling of character array.		
B.C.A.- IISem-III	Object Oriented Programming with	Principles of Objective Oriented Programming:History of OOP, Introduction to Object Oriented Programming, Basic Concepts of	Principles of Objective Oriented Programming: History of OOP, Introduction to Object Oriented Programming, Basic Concepts of Object Oriented	......	

	C++	Object Oriented Programming, Benefits of Object Oriented Programming, Object Oriented Languages, Difference between C and C++. Beginning with C++ Tokens, Keywords, Identifiers and Constants, Data Types, Type Compatibility, Variables, Operators in C++, Operator Precedence, Control Structures (Conditional, Unconditional and Looping).	Programming, Benefits of Object Oriented Programming, Object Oriented Languages, Difference between C and C++. Beginning with C++ Tokens, Keywords, Identifiers and Constants, Data Types, Type Compatibility, Variables, Operators in C++, Operator Precedence, Control Structures (Conditional, Unconditional and Looping).		
		Functions in C++, Classes & Objects: Concept of Function, main() Function, Inline Functions, Function Overloading, Specifying a Class, Data members and Member Functions, Access Specifiers, Friend Function, Static data Member, Object declaration and Initialization, Arrays of Objects **Constructors & Destructors, Inheritance** Constructors-Definition, Use of Constructors, Types of Constructors (Default, Parameterized, Copy, Dynamic), Destructors-Definition, Use, Inheritance-Definition, Types of Inheritance (Single, Multiple, Multilevel, Hierarchical, Hybrid)	**Functions in C++, Classes & Objects:** Concept of Function, main() Function, Inline Functions, Function Overloading, Specifying a Class, Data members and Member Functions, Access Specifiers, Friend Function, Static data Member, Object declaration and Initialization, Arrays of Objects **Constructors & Destructors, Inheritance** Constructors-Definition, Use of Constructors, Types of Constructors (Default, Parameterized, Copy, Dynamic), Destructors-Definition, Use, Inheritance-Definition, Types of Inheritance (Single, Multiple, Multilevel, Hierarchical, Hybrid)	......	
		Pointers, Virtual Functions &Polymorphism Pointer, Pointer to Object, this pointer, Pointer to Derived Classes, Polymorphism: Meaning, compile Time and Run time polymorphism, Rules for Operator Overloading, Operator Overloading (Unary & Binary)-with member function and friend function.	**Pointers, Virtual Functions &Polymorphism** Pointer, Pointer to Object, this pointer, Pointer to Derived Classes, Polymorphism: Meaning, compile Time and Run time polymorphism, Rules for Operator Overloading, Operator Overloading (Unary & Binary)-with member function and friend function.	......	
		Working with Files: File-Definition, Use, Classes for File Stream Operations, Opening and Closing a File, File Opening Modes, File Pointers, Manipulation of File Pointer(using-seekg,seekp,tellg,tellp), Input Output Operations-get ( ) Put ( ), read ( ) Write ( ).	**Working with Files** File-Definition, Use, Classes for File Stream Operations, Opening and Closing a File, File Opening Modes, File Pointers, Manipulation of File Pointer(using-seekg,seekp,tellg,tellp), Input Output Operations- get ( ) Put ( ), read ( ) Write ( ).	......	
B.C.A.-IIISem-V	**E-Commerce**	**Introduction to E-Commerce:**Defining Commerce; Main Activities of Electronic	**Introduction to E-Commerce:**Defining Commerce; Main Activities of Electronic	......	

Commerce; Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce – Communication, Process Management, Service Management, Transaction Capabilities; Limitations, Challenges and opportunities, Process of E-Commerce; Types of E-Commerce; Role of Internet and Web in E-Commerce; Technologies Used; E-Commerce Systems; Pre-requisites of E-Commerce; Scope of E-Commerce; E-Business Models. EDI- Concept, Components, working mechanism of EDI, Advantages and disadvantages of EDI. Difference between E-Business and E-Commerce, Introduction to M-Commerce.	Commerce; Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce – Communication, Process Management, Service Management, Transaction Capabilities; Limitations, Challenges and opportunities, Process of E-Commerce; Types of E-Commerce; Role of Internet and Web in E-Commerce; Technologies Used; E-Commerce Systems; Pre-requisites of E-Commerce; Scope of E-Commerce; E-Business Models. EDI- Concept, Components, working mechanism of EDI, Advantages and disadvantages of EDI. Difference between E-Business and E-Commerce, Introduction to M-Commerce.	
Electronic payment System Concept of e-payment, Difference between traditional and electronics payment system, **UPI, NCPI**, Digital cash, Credit and Debit card system, Smart Card, **E Wallet**, Prepaid, post paid and instant payment system, Electronic funds transfer, Concept of e-banking.	**Electronic payment System** Concept of e-payment, Difference between traditional and electronics payment system, **UPI, NCPI**, Digital cash, Credit and Debit card system, Smart Card, **E Wallet**, Prepaid, post paid and instant payment system, Electronic funds transfer, Concept of e-banking.	......
E-Security: Concept of E-security, Security threats-concept and types, Malicious code, Phishing and identity theft, Hacking and cyber vandalism, Credit card fraud/Theft, Spoofing, Denial of service (DoS), Firewall and proxy server.	**E-Security:** Concept of E-security, Security threats-concept and types, Malicious code, Phishing and identity theft, Hacking and cyber vandalism, Credit card fraud/Theft, Spoofing, Denial of service (DoS), Firewall and proxy server.	......
Security Solutions Concept of encryption and decryption, Symmetric and asymmetric key encryption, Cipher text, Digital Envelopes, Digital certificates, Security socket layer (SSL), Limitations of encryption solutions.	**Security Solutions** Concept of encryption and decryption, Symmetric and asymmetric key encryption, Cipher text, Digital Envelopes, Digital certificates, Security socket layer (SSL), Limitations of encryption solutions.	......

HEAD
DEPARTMENT OF B. C. A.
(Signature of the Head of Department)
(AUTONOMOUS)

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20 Term- IInd

Name of teacher- Mr. V. B. Pujari   Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
BCA-I Sem-II	Programming in C Part II	**User defined functions:** Need, multi functioned program, form of a c function, return value and their type, calling a function, category of a functions, **Actual and Formal arguments**, functions with array, Storage classes: auto, external, static and register. **Command line argument. Preprocessors-Introduction, types of Preprocessor.**	**User defined functions:** Need, multi functioned program, form of a c function, return value and their type, calling a function, category of a functions, **Actual and Formal arguments**, functions with array, Storage classes: auto, external, static and register. **Command line argument. Preprocessors-Introduction, types of Preprocessor.**	......	
		Pointers:Understanding pointers, accessing address of variable, declaration and initializing pointers, pointer expression, pointer to array and functions, function call by value and by reference. **Dynamic memory allocation-malloc(),calloc(),realloc().**	Pointers:Understanding pointers, accessing address of variable, declaration and initializing pointers, pointer expression, pointer to array and functions, function call by value and by reference. **Dynamic memory allocation-malloc(),calloc(),realloc().**	......	
		Structures and Unions:Defining and processing a structure, array of structure, array within structure, structure within structure, Defining and processing a Unions. **Difference between structure and union.**	Structures and Unions:Defining and processing a structure, array of structure, array within structure, structure within structure, Defining and processing a Unions. **Difference between structure and union.**	......	
		File Handling:Defining and opening a file, File opening mode- open, modify, write, Closing a file, Functions:fopen(), fclose(), fscanf(), Input/Output Operations on file: getc(), putc(), getw(), putw(), fprintf(), fscanf(), ftell(), fseek(), rewind().	File Handling:Defining and opening a file, File opening mode- open, modify, write, Closing a file, Functions:fopen(), fclose(), fscanf(), Input/Output Operations on file: getc(), putc(), getw(), putw(), fprintf(), fscanf(), ftell(), fseek(), rewind().	......	
B.C.A.-IISem-VI	Organizational Behavior	**Introduction to Organizational Behavior:** Definition, Importance, Scope, Fundamental Concepts of OB, Disciplines continuing to O.B. Evolution of O.B	**Introduction to Organizational Behavior:** Definition, Importance, Scope, Fundamental Concepts of OB, Disciplines continuing to O.B. Evolution of O.B	......	
		Attitude, Values and Motivation: Meaning of attitude, perception, Effects of employee attitudes, components of Attitude, Organizational Values, Importance of Motivation, Motivation process, Motivation model. Maslow's Need Hierarchy Theory	**Attitude, Values and Motivation:** Meaning of attitude, perception, Effects of employee attitudes, components of Attitude, Organizational Values, Importance of Motivation, Motivation process, Motivation model. Maslow's Need Hierarchy Theory	......	
		Organizational culture, Quality Work Life and	**Organizational culture, Quality Work Life and**	......	

		Stress Management : A) Organization Culture & Stress Management: B) Stress Management C) Quality Work Life	Stress Management A) Organization Culture & Stress Management: B) Stress Management C) Quality Work Life		
		Group Behavior ,Conflict and Stress: Nature of Group. Types of Groups, Team Building and Effective team works, Stages of group Formation, Concept of conflict- Conflicts & Stress – Concept, why and how & Management	**Group Behavior ,Conflict and Stress:** Nature of Group. Types of Groups, Team Building and Effective team works, Stages of group Formation, Concept of conflict- Conflicts & Stress – Concept, why and how & Management	......	
B.C.A.-IIISem-VI	Linux Operating System	**Introduction** 12 1.1 Operating system 1.2 Types of operating system 1.3 Functions of operating system 1.4 History and development of Linux 1.5 Features of Linux 1.6 Login , logout procedure, Concept of shell, kernel, Kernel-shell relationship	**Introduction** 12 1.1 Operating system 1.2 Types of operating system 1.3 Functions of operating system 1.4 History and development of Linux 1.5 Features of Linux 1.6 Login , logout procedure, Concept of shell, kernel, Kernel-shell relationship	......	
		Handling files and directory's 12 2.1 Concept of file, types, file system tree 2.2 Different GPU (clear ,cal , date, wc, who) 2.3 file handling- ls ,cat ,cp, mv , rm commands , listing file names, usingmeta characters (* , ? ,[ ]). 2.4 Concept of directory , home directory , directory handling commands- cd ,mkdir, rmdir,pwd. 2.5 Basic file attributes, change file/directory, chmod command 2.6 Filters-cut, paste, sort, unique, head, tail, grep commands. 2.7 Command linking using pipe (|) operator, command substitution.	**Handling files and directory's** 12 2.1 Concept of file, types, file system tree 2.2 Different GPU (clear ,cal , date, wc, who) 2.3 file handling- ls ,cat ,cp, mv , rm commands , listing file names, using meta characters (* , ? ,[ ]). 2.4 Concept of directory , home directory , directory handling commands- cd , mkdir, rmdir,pwd. 2.5 Basic file attributes, change file/directory, chmod command 2.6 Filters-cut, paste, sort, unique, head, tail, grep commands. 2.7 Command linking using pipe (|) operator, command substitution.	......	
		VI editor 12 3.1 Vi Editor, use of VI , features of VI 3.3 Different modes and working with VI editor 3.4 Command mode -cursor movements(k,j,h,l), delete(character, line, word), Screen up , down, use of repeat factor , joining lines (J), searching for	**VI editor** 12 3.1 Vi Editor, use of VI , features of VI 3.3 Different modes and working with VI editor 3.4 Command mode -cursor movements(k,j,h,l), delete(character, line, word), Screen up , down, use of repeat factor , joining lines (J), searching for	......	

		pattern (/ and ?) 3.5 Input mode- switching with (I,o,r,s,a,I,O,R,S,A) 3.6 ex mode – saving (w, x, q)	pattern (/ and ?) 3.5 Input mode- switching with (I,o,r,s,a,I,O,R,S,A) 3.6 ex mode – saving (w, x, q)		
		Simple Shell programming 12 4.1 Concept of Shell Script, running a shell script 4.2 Statements – read , echo , test , if, case , exit. 4.3 Loops- while, until, for 4.4 Command line arguments 4.5 Exit status of a command	**Simple Shell programming** 12 4.1 Concept of Shell Script, running a shell script 4.2 Statements – read , echo , test , if, case , exit. 4.3 Loops- while, until, for 4.4 Command line arguments 4.5 Exit status of a command	......	

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ESTD
JUNE
1964
(Autonomous)

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20   **Term- Ist**

Name of teacher- Ms. Vaishali Durgaram Patil   **Department- BCA**

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Fiancial Accounting with Tally	**Introduction to Financial Accounting** Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, Accounting Terminologies, Accounting Concepts and Conventions, Double entry system, Types of Accounts and Golden rules of accounting. Books of Prime Entry, Subsidiary Books and Ledger Creation.	**Introduction to Financial Accounting** Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, Accounting Terminologies, Accounting Concepts and Conventions, Double entry system, Types of Accounts and Golden rules of accounting. Books of Prime Entry, Subsidiary Books and Ledger Creation.	......	
		Preparation of Financial Statements Trial Balance – Meaning, Definition, purpose and features, preparation of TrialBalance. Final Accounts –Introduction,Objectives of Final Accounts, Adjustments before PreparingFinal Accounts, Preparation of Trading Account, Profit and Loss Account, BalanceSheet.	**Preparation of Financial Statements** Trial Balance – Meaning, Definition, purpose and features, preparation of TrialBalance. Final Accounts –Introduction,Objectives of Final Accounts, Adjustments before PreparingFinal Accounts, Preparation of Trading Account, Profit and Loss Account, BalanceSheet.	......	
		Introduction to Tally Tally History and Journey, Difference between manual accounting v/s computerized accounting, Tally features, Tally Fundamentals - Company Data – Gateway of Tally, Creating and Maintaining a Company, Loading a Company, F11: Company Features, F12: Configuration. VoucherEntry,Inventory-StockGroups,StockCategories,StockItems,Unitsof Measurement, Bills of Materials, Batches & ExpiryDates.	**Introduction to Tally** Tally History and Journey, Difference between manual accounting v/s computerized accounting, Tally features, Tally Fundamentals - Company Data – Gateway of Tally, Creating and Maintaining a Company, Loading a Company, F11: Company Features, F12: Configuration. VoucherEntry,Inventory-StockGroups,StockCategories,StockItems,Unitsof Measurement, Bills of Materials, Batches & ExpiryDates.	......	
		Report: Profit and Loss A/C, Balance Sheet, Interest Calculations, Statutory Master-VAT, Inventory report, Day Book, Use of Reports in Business	**Report:** Profit and Loss A/C, Balance Sheet, Interest Calculations, Statutory Master-VAT, Inventory report, Day Book, Use of Reports in Business	......	

B.C.A II Sem-III	**Management Accounting**	Introduction to Management Accounting:- Meaning and Nature of Management Accounting, Role of Management, Accountant in Planning, Controlling and Decision Making, Difference between Financial Accounting and Management Accounting, Tools and Techniques of Management Accounting	Introduction to Management Accounting:- Meaning and Nature of Management Accounting, Role of Management, Accountant in Planning, Controlling and Decision Making, Difference between Financial Accounting and Management Accounting, Tools and Techniques of Management Accounting	......	
		Financial Statement Analysis:- Importance of Financial Statement Analysis, Techniques of FinancialStatement Analysis- Ratio Analysis, Classification of Ratios- ProfitabilityRatio, Turnover Ratios, Liquidity Ratios, Solvency Ratios.	**Financial Statement Analysis:-** Importance of Financial Statement Analysis, Techniques of FinancialStatement Analysis- Ratio Analysis, Classification of Ratios- ProfitabilityRatio, Turnover Ratios, Liquidity Ratios, Solvency Ratios.	......	
		Cost-Volume- Profit(CVP) Analysis and Decision Making- Break Even Analysis, Cost-Volume- ProfitAnalysis, Decision Making- Make or Buy Decisions, Shut Down or ContinueDecisions, Alternative Course of Action etc.	**Cost-Volume- Profit(CVP)** Analysis and Decision Making- Break Even Analysis, Cost-Volume- ProfitAnalysis, Decision Making- Make or Buy Decisions, Shut Down or ContinueDecisions, Alternative Course of Action etc.	......	
		Budgetary Control:- Meaning of Budget and Budgetary Control, Objectives, Advantages, Limitations of Budgetary Control, Types of Budget- Production, Sales, Cash, Master Budget, Capital Expenditure,	**Budgetary Control:-** Meaning of Budget and Budgetary Control, Objectives, Advantages, Limitations of Budgetary Control, Types of Budget- Production, Sales, Cash, Master Budget, Capital Expenditu Input AnOutput	......	
BCA II Sem-III	**HRM**	**Introduction to HRM :** Introduction , Concept, Definition, HRD, Functions of HRM , Organization of HRD Role HRM ,Qualities of HR Manager, Limitations & challenges of HRM	**Introduction to HRM :** Introduction , Concept, Definition, HRD, Functions of HRM , Organization of HRD Role HRM ,Qualities of HR Manager, Limitations & challenges of HRM	......	
		Human resource Planning & Development : Meaning and need of HRP , Process of HRP in I.T. Industry, Factors affecting HRP , Job Analysis	**Human resource Planning & Development :** Meaning and need of HRP , Process of HRP in I.T. Industry, Factors affecting HRP , Job Analysis	......	
		Virtual Organization : Virtual Organization: meaning, type., Difference	**Virtual Organization :** Virtual Organization: meaning, type., Difference	......	

		between Traditional and Virtual Organization. ,features of Virtual Organization, HRM in Virtual Organization,	between Traditional and Virtual Organization. ,features of Virtual Organization, HRM in Virtual Organization,		
		Employee Separation Employee Separation practices in I.T. industry, Voluntary Retirement Schemes , Resignation-Discharge-Dismissal-Suspension-Layoff, Exit interview	**Employee Separation** Employee Separation practices in I.T. industry, Voluntary Retirement Schemes , Resignation-Discharge-Dismissal-Suspension-Layoff, Exit interview		
B.C.A III Sem-V	**Management Accounting**	**Introduction to Management Accounting:-** Meaning and Nature of Management Accounting, Role of Management, Accountant in Planning, Controlling and Decision Making, Difference between Financial Accounting and Management Accounting, Tools and Techniques of Management Accounting.	**Introduction to Management Accounting:-** Meaning and Nature of Management Accounting, Role of Management, Accountant in Planning, Controlling and Decision Making, Difference between Financial Accounting and Management Accounting, Tools and Techniques of Management Accounting.	......	
		Financial Statement Analysis:- Importance of Financial Statement Analysis, Techniques of FinancialStatement Analysis- Ratio Analysis, Classification of Ratios- ProfitabilityRatio, Turnover Ratios, Liquidity Ratios, Solvency Ratios.	**Financial Statement Analysis:-** Importance of Financial Statement Analysis, Techniques of FinancialStatement Analysis- Ratio Analysis, Classification of Ratios- ProfitabilityRatio, Turnover Ratios, Liquidity Ratios, Solvency Ratios.	......	
		Cost-Volume- Profit(CVP) Analysis and Decision Making- Break Even Analysis, Cost-Volume- ProfitAnalysis, Decision Making- Make or Buy Decisions, Shut Down or ContinueDecisions, Alternative Course of Action etc.	**Cost-Volume- Profit(CVP)** Analysis and Decision Making- Break Even Analysis, Cost-Volume- ProfitAnalysis, Decision Making- Make or Buy Decisions, Shut Down or ContinueDecisions, Alternative Course of Action etc.	......	
		Budgetary Control:- Meaning of Budget and Budgetary Control, Objectives, Advantages, Limitations of Budgetary Control, Types of Budget-Production, Sales, Cash, Master Budget, Capital Expenditure, Budgeting.	**Budgetary Control:-** Meaning of Budget and Budgetary Control, Objectives, Advantages, Limitations of Budgetary Control, Types of Budget-Production, Sales, Cash, Master Budget, Capital Expenditure, Budgeting.		

(Signature of the Head of Department)

HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, K
(AUTONOMOUS)

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20   **Term- IInd**

Name of teacher- Mrs. Vaishali D. Patil   Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A-I Sem-II	Financial Accounting	Book-Keeping & Accounting: Meaning, Internal & Accounting information, Accounting Concepts & Conve Procedure:- Transactions, Types of accounts, Rules of Documents:- Cash voucher, Petty Cash voucher, cash Me Note, Credit Note, Paying slips, withdrawals, Cheque.	Book-Keeping & Accounting: Meaning, Internal & Accounting information, Accounting Concepts & Conve Procedure:- Transactions, Types of accounts, Rules of Documents:- Cash voucher, Petty Cash voucher, cash Me Note, Credit Note, Paying slips, withdrawals, Cheque.	......	
		Bank Reconciliation statement:Meaning, Needs Reasons for difference in bank balance as per cash b per passbook, preparation of bank reconciliation sta errors and rectification of errors	Bank Reconciliation statement:Meaning, Needs Reasons for difference in bank balance as per cash b per passbook, preparation of bank reconciliation sta errors and rectification of errors	......	
		Journal & Ledger: Journal, Subsidiary Books, Cash Bo Posting.	Journal & Ledger: Journal, Subsidiary Books, Cash Bo Posting.	......	
		Final Accounts: Preparation of Trial balance, Prepara Accounts of Sole Traders & Partnership firms.	Final Accounts: Preparation of Trial balance, Prepara Accounts of Sole Traders & Partnership firms.	......	
B.C.A II Sem-IV	Principles of Management	Introduction to ManagementDefinition of Management, importance of management, Functions- Planning, Organi Directing, Controlling. Levels of management, Manageme Role of Manager in Organization, Contribution of F.W.	Introduction to ManagementDefinition of Management, importance of management, Functions- Planning, Organi Directing, Controlling. Levels of management, Manageme Role of Manager in Organization, Contribution of F.W.	......	
		Planning & Organizing Meaning, Nature, Importance lim Types of plans, steps involved in planning.Organizing :- Importance, principles of organizing.Formal& Informal organization.	Planning & Organizing Meaning, Nature, Importance lim Types of plans, steps involved in planning. Organizing :- Importance, principles of organizing.Formal& Informal organization.	......	
		DirectingMotivation:- Meaning, definition & importan Theories of motivation –Need Theory , Two factor th &Y.Leading:- Meaning , Definition, Important aspects of	DirectingMotivation:- Meaning, definition & importance of motivation, Theories ofmotivation –Need Theory , Two factor theory..& Theory X &Y.leading:ingretMaaning , Definition, Important aspects of leading, functions,		

		supervision, leadership, challenges of Leadership, Fu Leadership style, Team leadership.	supervision, leadership, challenges of Leadership, Fu Leadership style, Team leadership.		
		Controlling and Recent Trends in ManagementContr Importance, Steps in Control Process, Types of control-Fe Concurrent control & feedback control, Techniques of co in Management: Introduction to Management Of Management, Total Quality Management., Stress M Responsibility of Management.	Controlling and Recent Trends in ManagementContr Importance, Steps in Control Process, Types of control-Fe Concurrent control & feedback control, Techniques of co in Management: Introduction to Management Of Management, Total Quality Management., Stress M Responsibility of Management.	......	
BCA III Sem- VI	Entrepreneurs hip Development	**Entrepreneurship:-** Concept, Classification – Functions, Qualities of successful Entrepreneurship , Concept of Entrepreneur and entrepreneur. Entrepreneurship in modern Era.	**Entrepreneurship:-** Concept, Classification – Functions, Qualities of successful Entrepreneurship , Concept of Entrepreneur and entrepreneur. Entrepreneurship in modern Era.	......	
		Entrepreneurship Development:- Concept, objectives, process, problems, measures in Entrepreneurship Development , Role of Entrepreneurship In Economic Development (Theories**),** Institutional support for Entrepreneurship Development - National Institute for Entrepreneurship and Small Business Development (NIESBD), Small Industry Development Bank of India (SIDBI), District Industry Censes (DIC)	**Entrepreneurship Development:-** Concept, objectives, process, problems, measures in Entrepreneurship Development , Role of Entrepreneurship In Economic Development (Theories**),** Institutional support for Entrepreneurship Development - National Institute for Entrepreneurship and Small Business Development (NIESBD), Small Industry Development Bank of India (SIDBI), District Industry Censes (DIC)	......	
		Project Management:- Project- classification of project, Stages of Project Management, Reasons for failure for, Project, Project for Retail stores, Hotel, Hospital, Dairy.	**Project Management:-** Project- classification of project, Stages of Project Management, Reasons for failure for, Project, Project for Retail stores, Hotel, Hospital, Dairy.	......	
		Successful IT Indian Entrepreneurs:- Ratan Tata, AzimPremji, Narayan Murthy, Anand Mahindra, Kumar Mangalam Birla, NandanNilekani. **Introduction to Strategic Management** a) Strategic Management: Meaning and definitions of strategy and strategic	**Successful IT Indian Entrepreneurs:-** Ratan Tata, AzimPremji, Narayan Murthy, Anand Mahindra, Kumar Mangalam Birla, NandanNilekani. **Introduction to Strategic Management** a) Strategic Management: Meaning and definitions of strategy and strategic	......	

HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE
(AUTONOMOUS)

(Signature of the Head of Department)

ESTD JUNE 1964

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20　　　　　　　　　　　　　　　　　　**Term- Ist**

Name of teacher- Mrs. MeghaSagarPatil　　　　**Department- BCA**

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Fundamental of Computers	**Module I Introduction to computer :** Computer Characteristics, Concept of Hardware, Software , Evolution of computer and Generations, Types of computer – Analog& Digital computers, Hybrid computers, General purpose & Special Purpose Computer, Limitations of Computer, Applications of Computer in Various fields. Structure and Working of Computer: Functional Block diagram of computer. CPU, ALU, Memory Unit, Bus structure of Digital Computer - Address, data and control bus.	**Module I Introduction to computer :** Computer Characteristics, Concept of Hardware, Software , Evolution of computer and Generations, Types of computer – Analog& Digital computers, Hybrid computers, General purpose & Special Purpose Computer, Limitations of Computer, Applications of Computer in Various fields. Structure and Working of Computer: Functional Block diagram of computer. CPU, ALU, Memory Unit, Bus structure of Digital Computer - Address, data and control bus.	......	
		Module II Input /Output Devices : Input device – Keyboard, Mouse, Scanner, MICR, OMR. Output devices – VDU, Printers – Dot Matrix, Daisy-wheel, Inkjet, Laser, Line printers and Plotters. Computer Memory : Memory Concept , Memory cell, memory organization, Semiconductor memory- RAM, ROM, PROM,EPROM, Secondary Storage devices - Magnetic tape, Magnetic Disk (floppy disk & Hard disk.), Compact Disk.	**Module II Input /Output Devices :** Input device – Keyboard, Mouse, Scanner, MICR, OMR. Output devices – VDU, Printers – Dot Matrix, Daisy-wheel, Inkjet, Laser, Line printers and Plotters. Computer Memory : Memory Concept , Memory cell, memory organization, Semiconductor memory- RAM, ROM, PROM,EPROM, Secondary Storage devices - Magnetic tape, Magnetic Disk (floppy disk & Hard disk.), Compact Disk.	......	
		Module III Computer Language and Software : Number System - Decimal, Binary, Octal & Hexadecimal, Conversion from One base to another base. Computer Codes - : BCD, EBCDIC, ASCII, Machine Language, Assembly language, High Level language, Assembler, Compiler, Interpreter. Characteristics of good Language. Software - System and application software	**Module III Computer Language and Software :** Number System - Decimal, Binary, Octal & Hexadecimal, Conversion from One base to another base. Computer Codes - : BCD, EBCDIC, ASCII, Machine Language, Assembly language, High Level language, Assembler, Compiler, Interpreter. Characteristics of good Language. Software - System and application software	......	
		Module IV Operating System: Operating system, Evolution of operating system. Function of operating system. Types of operating systems. Detailed study of Windows Operating System. Introduction and Features of LINUX OS.	**Module IV Operating System:** Operating system, Evolution of operating system. Function of operating system. Types of operating systems. Detailed study of Windows Operating System. Introduction and Features of LINUX OS.	......	

B.C.A II Sem-III	System Analysis and Design	**Module I Introduction to System Concept** System Concept, elements, types of System, Characteristics of System, Program, Software System, Computer based System, SDLC,	**Module I Introduction to System Concept** System Concept, elements, types of System, Characteristics of System, Program, Software System, Computer based System, SDLC,	......	
		Module II System Analysis-Role and Traits: Preliminary analysis - Problem Solving attitude, Analyzing user requirement, Fact Finding - Interviews, questionnaire, observation, historical documents, Preliminary report, detailed analysis- review and assignment - Preliminary report, authorization and notification. Feasibility study, DFD and ERD.	**Module II System Analysis-Role and Traits:** Preliminary analysis - Problem Solving attitude, Analyzing user requirement, Fact Finding - Interviews, questionnaire, observation, historical documents, Preliminary report, detailed analysis- review and assignment - Preliminary report, authorization and notification. Feasibility study, DFD and ERD.	......	
		Module III System Design Input design - Data entry methods, Controlling data entry, guidelines for designing data entry screens, Output design - Guidelines, selecting best media, Formatting reports, report types, Controlling output. File design - Data storage, Capabilities and methods, disks, tapes, CD, Sequential access files, indexed files, direct access files.	**Module III System Design** Input design - Data entry methods, Controlling data entry, guidelines for designing data entry screens, Output design - Guidelines, selecting best media, Formatting reports, report types, Controlling output. File design - Data storage, Capabilities and methods, disks, tapes, CD, Sequential access files, indexed files, direct access files.	......	
		Module IV Testing and Maintenance - Software testing strategies - Unit testing, integration, testing, Validation testing, System testing, debugging Maintenance - Problems with maintenance, Structured and unstructured maintenance, organizing for maintenance, maintenance side effects.	**Module IV Testing and Maintenance -** Software testing strategies - Unit testing, integration, testing, Validation testing, System testing, debugging Maintenance - Problems with maintenance, Structured and unstructured maintenance, organizing for maintenance, maintenance side effects.	......	
B.C.A III Sem-	Networking	**Module I Basics of Data communication** 1.1. Data Communication concept 1.1.1 Components-sender, receiver, message,	**Module I Basics of Data communication** 1.1. Data Communication concept 1.1.1 Components-sender, receiver, message,	......	

		Content	Content		
V		transmission media 1.1.2 Data Flow- simplex, half-duplex, or full-duplex 1.2 Networks 1.2.1 Definition, Advantages and disadvantages 1.2.2 Categories of Networks- LAN, WAN. MAN 1.2.3 Network Architecture-Client-Server and Peer to peer 1.3 Multiplexing and switching 1.3.1 Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time-Division Multiplexing 1.3.2 Circuit switching, Packet Switching, Message Switching	transmission media 1.1.2 Data Flow- simplex, half-duplex, or full-duplex 1.2 Networks 1.2.1 Definition, Advantages and disadvantages 1.2.2 Categories of Networks- LAN, WAN. MAN 1.2.3 Network Architecture-Client-Server and Peer to peer 1.3 Multiplexing and switching 1.3.1 Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time-Division Multiplexing 1.3.2 Circuit switching, Packet Switching, Message Switching		
		Module II Transmission media and Reference Models 2.1 Transmission Media 2.1.1 Guided Media - Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable 2.1.2 Unguided Media: Radio Waves, Microwaves, Infrared, satellite communication 2.2 Transmission Modes- Parallel and Serial -(Asynchronous, Synchronous) 2.3 Reference Models 2.3.1 OSI reference model 2.3.2 TCP/IP reference model 2.3.3 Comparison of OSI and TCP/IP reference model 2.4 Protocol Standards 2.5 IP address scheme and characteristics of IP address	**Module II Transmission media and Reference Models** 2.1 Transmission Media 2.1.1 Guided Media - Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable 2.1.2 Unguided Media: Radio Waves, Microwaves, Infrared, satellite communication 2.2 Transmission Modes- Parallel and Serial -(Asynchronous, Synchronous) 2.3 Reference Models 2.3.1 OSI reference model 2.3.2 TCP/IP reference model 2.3.3 Comparison of OSI and TCP/IP reference model 2.4 Protocol Standards 2.5 IP address scheme and characteristics of IP address	......	
		Module III Data link, Network and Transport layer 3.1 Data link Layer- 3.1.1Design issues 3.1.2 Framing, error detection and correction 3.2 Network layer 3.2. 1 design issues of network layer	**Module III Data link, Network and Transport layer** 3.1 Data link Layer- 3.1.1Design issues 3.1.2 Framing, error detection and correction 3.2 Network layer 3.2. 1 design issues of network layer	......	

		3.2.2 Routing algorithm (shortest path, Flooding, distance vector,) 3.2.3 Congestion control 3.3 Transport layer 3.3.1 Transport Layer Primitives: listen, connect, send, receive, disconnect 3.3.2 Protocols: TCP, UDP	3.2.2 Routing algorithm (shortest path, Flooding, distance vector,) 3.2.3 Congestion control 3.3 Transport layer 3.3.1 Transport Layer Primitives: listen, connect, send, receive, disconnect 3.3.2 Protocols: TCP, UDP	
		Module IV Session, Presentation and Application layer 12 4.1 Session layer: 4.1.1 Services: dialog management, synchronization, activity management, exception handling 4.1.2 Remote procedure calls 4.2 Presentation layer: 4.2.1 Services: Translation, compression, encryption 4.2.2 Cryptography: concept, symmetric key &asymmetric key cryptography 4.3 Application layer: 4.3.1 Function4.3.2 Domain name system (DNS),Hypertext Transfer Protocol (HTTP),Simple Mail Transfer Protocol (SMTP) ,Telnet, File Transfer Protocol (FTP)	**Module IV Session, Presentation and Application layer 12** 4.1 Session layer: 4.1.1 Services: dialog management, synchronization, activity management, exception handling 4.1.2 Remote procedure calls 4.2 Presentation layer: 4.2.1 Services: Translation, compression, encryption 4.2.2 Cryptography: concept, symmetric key &asymmetric key cryptography 4.3 Application layer: 4.3.1 Function4.3.2 Domain name system (DNS),Hypertext Transfer Protocol (HTTP),Simple Mail Transfer Protocol (SMTP) ,Telnet, File Transfer Protocol (FTP)	......

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HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)

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JUNE
1964

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20 **Term- IInd**

Name of teacher- Mrs. MeghaSagarPatil   **Department- BCA**

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A- I Sem-II	Software Packages	**Module IMS-OFFICE:** Introduction to Ms-office, Components and features.	**Module IMS-OFFICE:** Introduction to Ms-office, Components and features.	......	
		Module II MS-WORD: Creating letter, table , fonts , page layout document formatting spell check, print preview, template, color, mail merge, auto text, inserting picture , word art. **MS EXCEL–** Introduction to Excel, Sorting, Queries, Graphs, Scientific functions.	**Module II MS-WORD:** Creating letter, table , fonts , page layout document formatting spell check, print preview, template, color, mail merge, auto text, inserting picture , word art. **MS EXCEL–** Introduction to Excel, Sorting, Queries, Graphs, Scientific functions.	......	
		Module III POWER POINT: Introduction to Power Point Creation of Slides, Inserting pictures, Preparing slide show with animation. **MS-ACCESS -** Creation and Manipulation of Files.	**Module III POWER POINT:** Introduction to Power Point Creation of Slides, Inserting pictures, Preparing slide show with animation. **MS-ACCESS -** Creation and Manipulation of Files.	......	
		Module IV Networking : Concept, Basic elements of a Communication System, Data transmission media, Topologies, LAN, MAN, WAN, Internet	**Module IV Networking :** Concept, Basic elements of a Communication System, Data transmission media, Topologies, LAN, MAN, WAN, Internet	......	

B.C.A II Sem-IV	DBMS	**Module I Introduction of Database**
		 1.1 Introduction
		 1.2 Definition of DBMS
		 1.3 file processing system Vs DBMS
		     1.3.1 Limitation of file processing system
		     1.3.2 Comparison of File processing system and DBMS
		 1.4 Advantages and Disadvantages of DBMS
		 1.5 Users of DBMS
		     1.5.1 Database Designers
		     1.5.2 Application programmer
		     1.5.3 Sophisticated Users
		     1.5.4 End Users
		 1.6 Capabilities of good DBMS
		 1.7 Types of Database System:
			Module I Introduction of Database
			 1.1 Introduction
			 1.2 Definition of DBMS
			 1.3 file processing system Vs DBMS
			     1.3.1 Limitation of file processing system
			     1.3.2 Comparison of File processing system and DBMS
			 1.4 Advantages and Disadvantages of DBMS
			 1.5 Users of DBMS
			     1.5.1 Database Designers
			     1.5.2 Application programmer
			     1.5.3 Sophisticated Users
			     1.5.4 End Users
			 1.6 Capabilities of good DBMS
			 1.7 Types of Database System:
				......	

1.7.1 Centralized database system 1.7.2 client-server system 1.7.3 Distributed database system.	1.7.1 Centralized database system 1.7.2 client-server system 1.7.3 Distributed database system.		

Module II Organization of Database System
2.1 Introduction
2.2. Logical and Physical Files
    2.2.1 Logical and Physical Files Definitions
    2.2.2 File Structure
2.3 Basic File Operations
    2.3.1 Opening Files
    2.3.2 Closing Files
    2.3.3 Reading and Writing
    2.3.4 Seeking
2.4 File Organization
    2.4.1 Field and Record structure in file
    2.4.2 Record Types
2.5 Types of file organization
    2.5.1 Files of Unordered Records (Heap Files)
    2.5.2 File of Ordered Records (Sorted Files)
    2.5.3 Hash Files
2.5.4 Indexed file
	Module II Organization of Database System
	2.1 Introduction
	2.2. Logical and Physical Files
	    2.2.1 Logical and Physical Files Definitions
	    2.2.2 File Structure
	2.3 Basic File Operations
	    2.3.1 Opening Files
	    2.3.2 Closing Files
	    2.3.3 Reading and Writing
	    2.3.4 Seeking
	2.4 File Organization
	    2.4.1 Field and Record structure in file
	    2.4.2 Record Types
	2.5 Types of file organization
	    2.5.1 Files of Unordered Records (Heap Files)
	    2.5.2 File of Ordered Records (Sorted Files)
	    2.5.3 Hash Files
	2.5.4 Indexed file
		......	

Module III Data Models
3.1 Introduction
3.2 Data Models
    3.2.1 Object Based Logical Model
    3.2.2 Record Base Logical Model
      a. Relational Model
      b. Network Model
      c. Hierarchical Model
3.3 Entity Relationship Model
    3.3.1 Entity Set
    3.3.2 Attribute
    3.3.3 Relationship Set
3.4 E-R Model terms Introduction
    a. Relation
    b. Tuple
    c. Attribute
    d. Cardinality
	Module III Data Models
	3.1 Introduction
	3.2 Data Models
	    3.2.1 Object Based Logical Model
	    3.2.2 Record Base Logical Model
	      a. Relational Model
	      b. Network Model
	      c. Hierarchical Model
	3.3 Entity Relationship Model
	    3.3.1 Entity Set
	    3.3.2 Attribute
	    3.3.3 Relationship Set
	3.4 E-R Model terms Introduction
	    a. Relation
	    b. Tuple
	    c. Attribute
	    d. Cardinality
		......	

		e. Degree
		f. Domain
		3.5 Keys
		    3.5.1 Super Key
		    3.5.2 Candidate Key
		    3.5.3 Primary Key
		    3.5.4 Foreign Key
		3.6. Relational Database Design
		    3.6.1 Introduction
		    3.6.2 Normalization
		    3.6.3 Normal Form
		        3.6.1 1 NF
		        3.6.2 2 NF
		    3.6.3 3 NF
			e. Degree
			f. Domain
			3.5 Keys
			    3.5.1 Super Key
			    3.5.2 Candidate Key
			    3.5.3 Primary Key
			    3.5.4 Foreign Key
			3.6. Relational Database Design
			    3.6.1 Introduction
			    3.6.2 Normalization
			    3.6.3 Normal Form
			        3.6.1 1 NF
			        3.6.2 2 NF
			    3.6.3 3 NF		

		Module IV Relational algebra
		4.1 Introduction
		4.2 Operations
		    a. Select
		    b. Project
		    c. Union
		    d. Difference
		    e. Intersection
		    f. Cartesian Product
		    g. Natural Join
		4.3. SQL (Structured Query Language)
		    4.3.1 Introduction
		    4.3.2 History of SQL
		    4.3.3 Basic Structure
		    4.3.4 DDL Commands
		    4.3.5 DML Commands
		    4.3.6 Simple Queries
		    4.3.7 Nested Queries
		    4.3.8 Aggregate Functions
		4.3.9 Clauses
			Module IV Relational algebra
			4.1 Introduction
			4.2 Operations
			    a. Select
			    b. Project
			    c. Union
			    d. Difference
			    e. Intersection
			    f. Cartesian Product
			    g. Natural Join
			4.3. SQL (Structured Query Language)
			    4.3.1 Introduction
			    4.3.2 History of SQL
			    4.3.3 Basic Structure
			    4.3.4 DDL Commands
			    4.3.5 DML Commands
			    4.3.6 Simple Queries
			    4.3.7 Nested Queries
			    4.3.8 Aggregate Functions
			4.3.9 Clauses
				......	

B.C.A III Sem-VI	DWDM	**Module I Introduction to Data Mining** 1.1 Basic Data mining Task 1.2 DM versus Knowledge Discovery in Databases 1.3 Data Mining Issues	**Module I Introduction to Data Mining** 1.1 Basic Data mining Task 1.2 DM versus Knowledge Discovery in Databases 1.3 Data Mining Issues	......	

		1.4 Data Mining Metrics 1.5 Social implementation of Data Mining 1.6 Overview of Application of Data mining 1.6.1 Architecture of DW 1.6.2 OLAP and Data Cubes 1.6.3 Dimensional Data Modeling - star , snowflake schemas 1.6.4 Data processing - Need Data cleaning. Data integration and Transformation, Data reduction 1.6.5 machine learning 1.6.6 pattern matching		
		Module II Data Mining techniques 2.1 Frequent item - set and association rule mining: apriori algorithm, use of sampling for frequent item- set tree algorithm 2.2 graph sampling : frequent sub graph mining . tree mining ,sequence mining 2.3 **Classification and prediction:** 2.3.1 Decision tree [3 hrs] 2.3.2 Construction, performance, attribute selection 2.3.3 Issues : Over fitting tree pruning methods, missing values, continuous classes 2.3.4 Classification and regression tree(CART) 2.3.5 Bayesians Classification [6 hrs] 2.3.6 Bayesians theorem , Narvee Bayes classifier 2.3.7 Bayesian networks 2.3.8 Inference 2.3.9 Parameter and structure learning 2.3.10 Leaner classification [4 hrs] 2.3.11 Least squares, logistics , perception and SVM classifiers 2.3.12 Prediction [3 hrs]		......

		2.3.13 Linear regression 2.3.14 Non-linear regression	2.3.13 Linear regression 2.3.14 Non-linear regression		
		Module III Clustering 3.1 K-means 3.2 expectation maximization (EM) algorithm 3.3 Hierarchical clustering , Carrolton clustering	**Module III Clustering** 3.1 K-means 3.2 expectation maximization (EM) algorithm 3.3 Hierarchical clustering , Carrolton clustering	......	
		Module IVSoftware for Data mining and application of Data mining 10 4.1 R 4.2 Weka 4.3 Sample applications of data mining	**Module IV Software for Data mining and application of Data mining 10** 4.1 R 4.2 Weka 4.3 Sample applications of data mining	......	

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HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20   **Term- IInd**

Name of teacher- Ms. Kumbhar   **Department- BCA**

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A II Sem-IV	Mathematics Foundation	**Unit 1 SETS:** 1.1 Meaning of a set.1.2 Methods of describing of a set.1.2.1 Tabular form1.2.2 Set builder form1.3 Types of a set1.3.1 Finite set, Infinite set, Empty set, Subset, Universal set.1.3.2 Equal sets, Disjoint sets, Complementary set.1.4 Operation on Sets 1.4.1 Union of sets 1.4.2 Intersection of sets1.4.3 Difference of sets.1.5 De Morgan's Laws (without proof).1.6 Venn diagram.1.7 Cartesian product of two sets.1.8 Idempotent laws, Identity laws, Commutative Laws, Associative laws, Distributive laws, Inverse laws, Domination Laws, Absorption laws, Involution laws.1.9 Duality.1.10 Computer Representation of sets and its operations.1.11 Examples based on above.	**Unit 1 SETS:** 1.1 Meaning of a set. 1.2 Methods of describing of a set.1.2.1 Tabular form 1.2.2 Set builder form 1.3 Types of a set 1.3.1 Finite set, Infinite set, Empty set, Subset, Universal set.1.3.2 Equal sets, Disjoint sets, Complementary set. 1.4 Operation on Sets 1.4.1 Union of sets 1.4.2 Intersection of sets 1.4.3 Difference of sets. 1.5 De Morgan's Laws (without proof). 1.6 Venn diagram. 1.7 Cartesian product of two sets. 1.8 Idempotent laws, Identity laws, Commutative Laws, Associative laws, Distributive laws, Inverse laws, Domination Laws, Absorption laws, Involution laws. 1.9 Duality. 1.10 Computer Representation of sets and its operations. 1.11 Examples based on above.	......	
		Unit 2 Logic : 2.1 Introduction2.2 Meaning of Statement (Proposition).2.3 Simple and compound statements.2.4 Truth values of a statement.2.5 Law of excluded middle.2.6 Logical Operations: Negation, Conjunction, Disjunction, Implication, Double Implication.2.7 Equivalence of Logical statements.2.8 Truth Tables and construction of truth tables.2.9 Converse, Inverse and Contra positive.2.10 Statement forms: Tautology, Contradiction, Contingency.2.11 Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws,Involution laws, Distributive laws, Complement laws, De Morgan's laws.2.12 Argument: Valid and Invalid	**Unit 2 Logic :** 2.1 Introduction 2.2 Meaning of Statement (Proposition). 2.3 Simple and compound statements. 2.4 Truth values of a statement. 2.5 Law of excluded middle. 2.6 Logical Operations: Negation, Conjunction, Disjunction, Implication, Double Implication. 2.7 Equivalence of Logical statements. 2.8 Truth Tables and construction of truth tables. 2.9 Converse, Inverse and Contra positive. 2.10 Statement forms: Tautology, Contradiction, Contingency. 2.11 Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws,Involution laws, Distributive laws, Complement laws, De Morgan's laws. 2.12 Argument: Valid and Invalid	......	

		arguments.2.13 Examples based on above.	arguments. 2.13 Example based on above.		
		Unit 3 Matrices : 3.1 Meaning of a matrix, Order of matrix.3.2 Types of matrices 3.2.1 Row matrix, Column matrix, Null matrix, Unit matrix3.2.2 Square Matrix, Diagonal matrix, Scalar matrix,3.2.3 Symmetric matrix, Skew - symmetric matrix3.2.4 Transpose of a matrix,3.3 Definition of Determinants of order 2nd & 3rd and their expansions3.4 Singular and Non-Singular Matrices3.5 Algebra of Matrices3.5.1 Equality of matrices3.5.2 Scalar Multiplication of matrix3.5.3 Addition of matrices, Subtraction of matrices3.5.4 Multiplication of matrices.3.6 Elementary Row & Column Transformations 3.7 Inverse of Matrix (Using Elementary Transformations)3.8 Examples based on above.	**Unit 3 Matrices :** 3.1 Meaning of a matrix, Order of matrix. 3.2 Types of matrices 3.2.1 Row matrix, Column matrix, Null matrix, Unit matrix 3.2.2 Square Matrix, Diagonal matrix, Scalar matrix, 3.2.3 Symmetric matrix, Skew - symmetric matrix 3.2.4 Transpose of a matrix, 3.3 Definition of Determinants of order 2nd & 3rd and their expansions 3.4 Singular and Non-Singular Matrices 3.5 Algebra of Matrices 3.5.1 Equality of matrices 3.5.2 Scalar Multiplication of matrix 3.5.3 Addition of matrices, Subtraction of matrices 3.5.4 Multiplication of matrices. 3.6 Elementary Row & Column Transformations 3.7 Inverse of Matrix (Using Elementary Transformations) 3.8 Examples based on above.	......	
		Unit 4 Graph Theory : 4.1 Introduction to Graph 4.2 Kinds of Graph : Simple, Multi and Pseudo Graph4.3 Digraph4.4 Weighted Graph 4.5 Degree of Vertex, Isolated Vertex 4.6 Path, Cycle, A-Cycle,4.7 Types of Graph: Complete, Regular, Bi-Partite, Complete Bi-partite, Isomorphism of Graph 4.8 Matrix Representation of Graph: Adjacency and Incidence Matrix 4.9 Operation on Graph: Union, Intersection, Complement, Product of Graphs, Fusion of Graphs 4.10 Examples based on above.	**Unit 4 Graph Theory :** 4.1 Introduction to Graph 4.2 Kinds of Graph : Simple, Multi and Pseudo Graph4.3 Digraph4.4 Weighted Graph 4.5 Degree of Vertex, Isolated Vertex4.6 Path, Cycle, A-Cycle,4.7 Types of Graph: Complete, Regular, Bi-Partite, Complete Bi-partite, Isomorphism of Graph 4.8 Matrix Representation of Graph: Adjacency and Incidence Matrix 4.9 Operation on Graph: Union, Intersection, Complement, Product of Graphs, Fusion of Graphs 4.10 Examples based on above.	......	

(Signature of the Head of Department)

ESTD
JUNE
1964

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED
Year- 2019-20   Term- I^st
Name of teacher- Mr. R. S. Sawant   Department- B.C.A.

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A.- I Sem-I	Principles of Management	Introduction to ManagementDefinition of Management importance of management, Functions- Planning, Organ Directing, Controlling. Levels of management, Managen Role of Manager in Organization, Contribution of F.W.Ta Max Weber Elton Mayo and Peter Drucker to managem	Introduction to ManagementDefinition of Management, importance of management, Functions- Planning, Organ Directing, Controlling. Levels of management, Managem Role of Manager in Organization, Contribution of F.W.Ta Max Weber Elton Mayo and Peter Drucker to managem	......	
		Planning & Organizing Meaning, Nature, Importance li Types of plans, steps involved in planning. Organizing :- Importance, principles of organizing.Formal& Informal organization.	Planning & Organizing Meaning, Nature, Importance li Types of plans, steps involved in planning.Organizing :- Importance, principles of organizing.Formal& Informal organization.	......	
		Directing Motivation:- Meaning, definition & import Theories of motivation –Need Theory , Two factor &Y.Leading:- Meaning , Definition, Important aspects supervision, leadership, challenges of Leadership, Leadership style, Team leadership.	DirectingMotivation:- Meaning, definition & importa Theories of motivation –Need Theory , Two factor &Y.Leading:- Meaning , Definition, Important aspects supervision, leadership, challenges of Leadership, Leadership style, Team leadership.	......	
		Controlling and Recent Trends in ManagementCon Importance, Steps in Control Process, Types of control-I Concurrent control & feedback control, Techniques of in Management: Introduction to Management O Management, Total Quality Management., Stress Responsibility of Management.	Controlling and Recent Trends in ManagementCon Importance, Steps in Control Process, Types of control-F Concurrent control & feedback control, Techniques of in Management: Introduction to Management O Management, Total Quality Management., Stress Responsibility of Management.	......	
B.C.A.-IIISem-V	Visual Programming	Unit -1: Introduction 1.1 overview, Architecture, Features of .NET , 1.2 Meta data, CLR, Managed and unmanaged code 1.3 CTS, CLS, .NET base classes	Unit -1: Introduction 1.1 overview, Architecture, Features of .NET , 1.2 Meta data, CLR, Managed and unmanaged code 1.3 CTS, CLS, .NET base classes	......	

		1.4 Introduction to Visual Studio .NET IDE 1.5 Types of JIT compiler	1.4 Introduction to Visual Studio .NET IDE 1.5 Types of JIT compiler	
		Unit -2: Introduction To C# 2.1 Introduction to C#, Entry point method, command line arguments 2.2 Compiling and building projects, Compiling a C# program using command line utility, CSC.EXE, Different valid forms of main. 2.3 Global stack and heap memory, reference type and data type, casting implicit and explicit 2.4 Boxing and unboxing, pass by value and pass by reference and out parameters 2.5 Partial class, DLL, Difference between DLL and EXE	**Unit -2: Introduction To C#** 2.1 Introduction to C#, Entry point method, command line arguments 2.2 Compiling and building projects, Compiling a C# program using command line utility, CSC.EXE, Different valid forms of main. 2.3 Global stack and heap memory, reference type and data type, casting implicit and explicit 2.4 Boxing and unboxing, pass by value and pass by reference and out parameters 2.5 Partial class, DLL, Difference between DLL and EXE	......
		Unit-3: Introduction to Web Programming 3.1 Understanding role of WEB server and WEB browser, HTTP request and response structure. 3.2 Introduction to ASP, Types of path, FORM tag 3.3 Types of server controls 3.4 Validation controls-Base validator, compare validator, range validator, grouping control validator 3.5 Web forms life cycle 3.6 Event handling in WEB forms, response.redirect, server.response, cross page post back property of button 3.7 ASP.NET state management 3.8 WEB.config, globalization and localization, AppDomain	**Unit-3: Introduction to Web Programming** 3.1 Understanding role of WEB server and WEB browser, HTTP request and response structure. 3.2 Introduction to ASP, Types of path, FORM tag 3.3 Types of server controls 3.4 Validation controls-Base validator, compare validator, range validator, grouping control validator 3.5 Web forms life cycle 3.6 Event handling in WEB forms, response.redirect, server.response, cross page post back property of button 3.7 ASP.NET state management 3.8 WEB.config, globalization and localization, AppDomain	......
		Unit 4 : ADO .NET 4.1 Introduction to ADO.Net 4.2 ADO.NET Architecture- Conncetion, command, dat reader, data adapter, data set 4.3 Understanding connected layaer of ADO.NET	**Unit 4 : ADO .NET** 4.1 Introduction to ADO.Net 4.2 ADO.NET Architecture- Conncetion, command, dat reader, data adapter, data set 4.3 Understanding connected layaer of ADO.NET	......

		and disconnected layer of ADO.NET	and disconnected layer of ADO.NET		
B.C.A.-IIISem-V	**RDBMS with Oracle**	**Unit –1: Relational Database Management System:**1.1 Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS.1.2 Introduction of Oracle, Role and responsibilities of DBA. 1.3 RDBMS Terminology- Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules 1.4 Relational Model, Functional Dependencies, Normalization and its types	**Unit –1: Relational Database Management System:**1.1 Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS.1.2 Introduction of Oracle, Role and responsibilities of DBA. 1.3 RDBMS Terminology- Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules 1.4 Relational Model, Functional Dependencies, Normalization and its types	......	
		Unit –2: INTRODUCTION TO SQL: 2.1 Features of SQL, Data types, 2.2 Classification of SQL Commands – DDL (create, alter, drop), DML (insert, update, delete), DCL (grant, revoke), TCL (rollback, commit). 2.3 SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check) 2.4 Select statement with group by and order by clause 2.5 SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator 2.6 SQL Functions- Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.	**Unit –2: INTRODUCTION TO SQL:** 2.1 Features of SQL, Data types, 2.2 Classification of SQL Commands – DDL (create, alter, drop), DML (insert, update, delete), DCL (grant, revoke), TCL (rollback, commit). 2.3 SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check) 2.4 Select statement with group by and order by clause 2.5 SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator 2.6 SQL Functions- Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.	......	
		Unit – 3: JOIN AND SUB QUERIES: 3.1 Join types - Inner Join, Outer Join, Cross Join and self-Join 3.2 Sub-queries, Multiple sub queries, nesting of sub queries, sub queries in DML commands. 3.3 Correlated queries, Indexes, Sequences. Views-Create View, Drop, View and its Advantages.	**Unit – 3: JOIN AND SUB QUERIES:** 3.1 Join types - Inner Join, Outer Join, Cross Join and self-Join 3.2 Sub-queries, Multiple sub queries, nesting of sub queries, sub queries in DML commands. 3.3 Correlated queries, Indexes, Sequences. Views-Create View, Drop, View and its Advantages.	......	
		Unit – 4: INTRODUCTION TO PL/SQL: 4.1 Introduction to PL/SQL, Block Structure 4.2 Data types in PL-SQL	**Unit – 4: INTRODUCTION TO PL/SQL:** 4.1 Introduction to PL/SQL, Block Structure 4.2 Data types in PL-SQL	......	

| | | 4.3 Control Structures-Branching statements, Iterative Control statements.
 4.4 Cursors –Concept, Types- Implicit, Explicit, Procedure to create explicit cursors, Cursor Attributes.
 4.5 TRIGGERS: Concept and types. | 4.3 Control Structures Branching statements, Iterative Control statements.
 4.4 Cursors –Concept, Types- Implicit, Explicit, Procedure to create explicit cursors, Cursor Attributes.
 4.5 TRIGGERS: Concept and types. | | |

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HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)

ESTD
JUNE
1964
VIVEKANAND COLLEGE KOLHAPUR
(Autonomous)

(Signature of the Teacher)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20 Term- IInd

Name of teacher- Mr. R.S.Sawant   Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
BCA-I Sem-II	Bank Management	**Unit 1 : Bank Organization:** Meaning and concept of Bank Importance and Functions Management- Customer centric v/s Business Centric man bank-Bank organization- Role of Director, General manag Important Provisions of - Banking regulation Act- 1949.	**Unit 1 : Bank Organization:** Meaning and concept of Bank Importance and Functions Management- Customer centric v/s Business Centric man bank-Bank organization- Role of Director, General manag Important Provisions of - Banking regulation Act- 1949.	......	
		Unit 2 : Liquidity and credit Management Liquidity policies- Day to Day management of the money supervision and Follow up credit administration and mon management-concept of Leasing and Hire purchase.RBI : Repo, Revise Repo, CRR Policy, RIB Selection	**Unit 2 : Liquidity and credit Management** Liquidity policies- Day to Day management of the money supervision and Follow up credit administration and mon management-concept of Leasing and Hire purchase.RBI : Repo, Revise Repo, CRR Policy, RIB Selection	......	
		Unit 3: Customer service and ombudsman scheme: Customer Orientation, Basic Aspects of Customer Service Collections Services, Loans and Advances, Discipline and Customer (KYC) Policy: Definition, Objective, Key Element .Debit/Smart Cards. Banking Ombudsman Scheme: Scope	**Unit 3: Customer service and ombudsman scheme:** Customer Orientation, Basic Aspects of Customer Service Collections Services, Loans and Advances, Discipline and Customer (KYC) Policy: Definition, Objective, Key Element .Debit/Smart Cards. Banking Ombudsman Scheme: Scope	......	
		Unit 4:Capital Management and Information Technolog Banking sector reforms- Capital adequacy-E- banking, E-n Information system. **Virtual Banking**	**Unit 4:Capital Management and Information Technolog** Banking sector reforms- Capital adequacy-E- banking, E-n Information system. **Virtual Banking**	......	
B.C.A.-IISem-IV	Web Technology	**Unit 1 Internet and WWW :** 1.1 Network, Client, Server, 1.2 What is Internet & Applications, WWW	**Unit 1 Internet and WWW :** 1.1 Network, Client, Server, 1.2 What is Internet & Applications, WWW	......	

		1.3 URL, DNS, Bbrowsers, **Web Development:** 2.1 :Introduction, features, steps in web development, . 2.2 Scripting Languages 2.3 HTML,structure 2.4 Basic Tags 2.5 Formatting tags , examples	1.3 URL, DNS, Bbrows **Web Development:** 2.1 :Introduction, features, steps in web development, . 2.2 Scripting Languages 2.3 HTML,structure 2.4 Basic Tags 2.5 Formatting tags , examples	
		Unit 2 HTML tags : 3.1 Heading and paragraph tags, font tag. <table> tag 3.2 List Tags-ordered and unordered list tags: , <HR>.,<Marquee> 3.3 : Hyperlink, <A> Image and Image maps, <form> tag, form controls to design UI	**Unit 2 HTML tags:** 3.1 Heading and paragraph tags, font tag. <table> tag 3.2 List Tags-ordered and unordered list tags: , <HR>.,<Marquee> 3.3 : Hyperlink, <A> Image and Image maps, <form> tag, form controls to design UI	......
		Unit 3 JAVA SCRIPT : 4.1 Introduction, Difference in Client-Side and Server-Side Script, features, introduction to Java script 4.2 keywords, data types, control statements (if-else, looping) with examples 4.3 objects in java. Events and Event Handlers, 4.4 Dialogue boxes, Built-in functions and Validations	**Unit 3 JAVA SCRIPT :** 4.1 Introduction, Difference in Client-Side and Server-Side Script, features, introduction to Java script 4.2 keywords, data types, control statements (if-else, looping) with examples 4.3 objects in java. Events and Event Handlers, 4.4 Dialogue boxes, Built-in functions and Validations	......
		Unit 4 Introduction to Server-Side scripting : 5.1 ASP – Advantages and limitations, server set-up for ASP (PWS/IIS), built in ASP objects 5.2 loop Structure, control structure (If-Else-Then), methods to get data from 5.3 Clients – (GET and POST), difference between GET and POST 5.4,database handling, connections and record set object. 5.5Case Studies: On line Shopping Website, University Website	**Unit 4 Introduction to Server-Side scripting :** 5.1 ASP – Advantages and limitations, server set-up for ASP (PWS/IIS), built in ASP objects 5.2 loop Structure, control structure (If-Else-Then), methods to get data from 5.3 Clients – (GET and POST), difference between GET and POST 5.4,database handling, connections and record set object. 5.5Case Studies: On line Shopping Website, University Website	......
B.C.A.-IIISem-VI	Java Programming	Unit- 1- Introduction To Java 1.1 History and features of Java Programming 1.2 Difference between Java & C++ 1.3 Java Environment 1.4 Java tokens, constants, variables, data types, type casting 1.5 Operators and Expressions 1.6 Implementing Java Program 1.7 Branching and looping statements 1.8 Class, objects, methods 1.9 Constructors and destructor	Unit- 1- Introduction To Java 1.1 History and features of Java Programming 1.2 Difference between Java & C++ 1.3 Java Environment 1.4 Java tokens, constants, variables, data types, type casting 1.5 Operators and Expressions 1.6 Implementing Java Program 1.7 Branching and looping statements 1.8 Class, objects, methods 1.9 Constructors and destructor	......
		Unit-2- Inheritance and Packages 2.1 Defining sub class, subclass constructor 2.2 Inheritance-Multiple and hierarchical 2.3 Defining	Unit-2- Inheritance and Packages 2.1 Defining sub class, subclass constructor 2.2 Inheritance-Multiple and hierarchical 2.3 Defining	......

		packages, system packages 2.4 Creating & accessing packages 2.5 Adding a class to package 2.6 Polymorphism- function overloading and over ridding, its difference	packages, system packages 2.4 Creating & accessing packages 2.5 Adding a class to package 2.6 Polymorphism- function overloading and over ridding, its difference		
		Unit-3- Multithreading and Exception Handling 3.1 Creating threads, extending a thread class- declaring the class, run() method 3.2 Stopping and blocking threads 3.3 Life cycle of thread 3.4 Using thread method 3.5 Thread priority 3.6 Introduction to exception 3.7 Syntax of exception handling code 3.8 Multiple catch statement 3.9 Using finally statement 3.10 Throwing exception	Unit-3- Multithreading and Exception Handling 3.1 Creating threads, extending a thread class- declaring the class, run() method 3.2 Stopping and blocking threads 3.3 Life cycle of thread 3.4 Using thread method 3.5 Thread priority 3.6 Introduction to exception 3.7 Syntax of exception handling code 3.8 Multiple catch statement 3.9 Using finally statement 3.10 Throwing exception	....	
		Unit- 4- Applets Programming & Introduction to AWT 4.1 Introduction to applets 4.2 Building applet code 4.3 Applet life cycle 4.4 Adding applet code to HTML file 4.5 Introduction to Abstract Window Toolkit (AWT)	Unit- 4- Applets Programming & Introduction to AWT 4.1 Introduction to applets 4.2 Building applet code 4.3 Applet life cycle 4.4 Adding applet code to HTML file 4.5 Introduction to Abstract Window Toolkit (AWT)	....	

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JUNE
1964

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VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)
STATEMENT OF SYLLABUS COVERED

Year- 2019-20

Name of teacher- Mr. AjitPawar

Term- I[st]

Department- B.C.A.

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A.- II Sem- III	Computer Oriented Statistical Methods	**(A) Introduction to Statistics** 1.1 Meaning and Scope of Statistics, Primary and Secondary data. 1.2 Frequency, Frequency distribution, Qualitative and quantitative data, Discrete and Continuous variables. 1.3 Representation of frequency distribution by graphs: Histogram, Frequency polygon, Frequency curve, O give curve. 1.4 Numerical examples based on 1.2 1.5 Definition: Random Experiment, Sample space, Event and Types of Events. Classical Definition of Probability of an Event. Conditional Probability. 1.6 Addition and Multiplication laws of probability for two events(Without proof). 1.7 Examples without use of permutations and combination	**(A) Introduction to Statistics** 1.1 Meaning and Scope of Statistics, Primary and Secondary data. 1.2 Frequency, Frequency distribution, Qualitative and quantitative data, Discrete and Continuous variables. 1.3 Representation of frequency distribution by graphs: Histogram, Frequency polygon, Frequency curve, O give curve. 1.4 Numerical examples based on 1.2 1.5 Definition: Random Experiment, Sample space, Event and Types of Events. Classical Definition of Probability of an Event. Conditional Probability. 1.6 Addition and Multiplication laws of probability for two events(Without proof). 1.7 Examples without use of permutations and combination.	......	
		Measures of Central Tendency and Dispersion **2.1 Measures of central Tendency (Averages)** 2.1.1 Meaning of averages, Requirements of good average 2.1.2 Definitions of Arithmetic mean (A.M.), Combined mean, Median, Quartiles, Mode,	**Measures of Central Tendency and Dispersion** **2.1 Measures of central Tendency (Averages)** 2.1.1 Meaning of averages, Requirements of good average 2.1.2 Definitions of Arithmetic mean (A.M.), Combined mean, Median, Quartiles, Mode,	......	

Relation between mean, median and mode. 2.1.3 Merits and Demerits of Mean, Median and Mode 2.1.4 Numerical examples based on 2.1.2 2.1.5 Determination of Median and Mode by Graph **2.2 Measures of Dispersion(Variability):** 2.2.1 Meaning of Variability, Absolute and Relative measures of dispertion. 2.2.2 Definitions of Q.D., M.D., S.D. and Variance, Combined variance and their relative measures, Coefficient of Variation 15(C.V.). 2.2.3 Numerical examples based on 2.2.2.	Relation between mean, median and mode. 2.1.3 Merits and Demerits of Mean, Median and Mode 2.1.4 Numerical examples based on 2.1.2 2.1.5 Determination of Median and Mode by Graph **2.2 Measures of Dispersion(Variability):** 2.2.1 Meaning of Variability, Absolute and Relative measures ofdispertion. 2.2.2 Definitions of Q.D., M.D., S.D. and Variance, Combined variance and their relative measures, Coefficient of Variation 15(C.V.). 2.2.3 Numerical examples based on 2.2.2.	
Analysis of Bivariate data **3.1 Correlation** 3.1.1 Concept of Correlation, Types of correlation (Positive, Negative, Linear and Non-linear), Methods of studying correlation: Scatter diagram, Karl Pearson's Correlation Coefficient (r) and Spearman's Rank Correlation Coefficient (R). 3.1.2 Interpretation of $r = +1$, $r = -1$, $r = 0$. 3.1.3 Numerical examples on 3.1.1and 3.1.2 **3.Regression:** 3.2.1. Concept of Regression, Definitions of regression coefficients and Equations of regression lines. Properties of regression coefficients. (Statements only) 3.2.2 Numerical examples on 3.2.1.	**Analysis of Bivariate data** **3.1 Correlation** 3.1.1 Concept of Correlation, Types of correlation (Positive, Negative, Linear and Non-linear), Methods of studying correlation: Scatter diagram, Karl Pearson's Correlation Coefficient (r) and Spearman's Rank Correlation Coefficient (R). 3.1.2 Interpretation of $r = +1$, $r = -1$, $r = 0$. 3.1.3 Numerical examples on 3.1.1and 3.1.2 **3.Regression:** 3.2.1. Concept of Regression, Definitions of regression coefficients and Equations of regression lines. Properties of regression coefficients. (Statements only) 3.2.2 Numerical examples on 3.2.1.	......
Module4 – Sampling Techniques and Time Series Analysis **4.1 Sampling Techniques:** 4.1.1 Definitions of Sample, Population, Sampling, Sampling Method and Census	**Module4 – Sampling Techniques and Time Series Analysis** **4.1 Sampling Techniques:** 4.1.1 Definitions of Sample, Population, Sampling, Sampling Method and Census	......

| | | | method. Advantages of sampling method over census method.
4.1.2 Types of sampling: Simple Random Sampling (with and without replacement), Stratified
Random Sampling, Merits and Demerits of S.R.S. and Stratified Sampling
4.1.3 Simple examples on Stratified Sampling.
4.2 Time Series: (Analysis and Forecasting)
4.2.1 Meaning and components of Time Series
4.2.2 Methods of determination of trend by
    (I) Method of Moving Averages.
    (II) Method of Progressive Averages.
    (III) Method of Least Squares (St.Line only)
    4.2.3 Numerical examples on 4.2.2. | method. Advantages of sampling method over census method.
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    4.2.3 Numerical examples on 4.2.2. | | |

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HEAD
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