



DR. C.V.RAMAN UNIVERSITY
KARGI ROAD, KOTA, BILASPUR (C.G.)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

Duration - 36 Months

(3 Years)

Eligibility – 12th in any discipline

SCHEME OF EXAMINATION

Course Code	Nature of the Course	Name of the Course	Credit			Total Credits	Total Marks	Theory		Practical		Assignment	
			L	P	T			Max	Min	Max	Min	Max	Min
First Semester													
3010113801	Ability Enhancement	Hindi Bhasha Aur Sanrachna	3	-	1	4	100	70	23	-	-	30	15
3010112901	Ability Enhancement	Entrepreneurship Development-I	3	-	1	4	100	70	23	-	-	30	15
3010112101	Core	Discrete Mathematics	3	-	1	4	100	70	23	-	-	30	15
3010122102	Core	Fundamentals of Computers & office package	3	1	-	4	100	70	23	30	15	-	-
3010122103	Core	Programming in C	3	1	-	4	100	70	23	30	15	-	-
Total			15	2	3	20	500	350	115	60	30	90	45
Second Semester													
3010214601	Ability Enhancement	English Language and Indian Culture	3	-	1	4	100	70	23	-	-	30	15
3010212901	Ability Enhancement	Entrepreneurship Development-II	3	-	1	4	100	70	23	-	-	30	15
3010212101	Core	Digital Computer Organization	3	-	1	4	100	70	23	-	-	30	15
3010222102	Core	Object Oriented Programming with C++	3	1	-	4	100	70	23	30	15	-	-
3010222103	Core	Internet Programming	3	1	-	4	100	70	23	30	15	-	-
Total			15	2	3	20	500	350	115	60	30	90	45
Third Semester													
3010313801	Ability Enhancement	Hindi Bhasha Avam Samvedana	3	-	1	4	100	70	23	-	-	30	15
3010311102	Ability Enhancement	Environmental Study-I	3	-	1	4	100	70	23	-	-	30	15
3010312101	Core	Operating System	3	-	1	4	100	70	23	-	-	30	15
3010322102	Core	Computer Communication & Networks	3	1	-	4	100	70	23	30	15	-	-
3010322103	Core	Programming with JAVA	3	1	-	4	100	70	23	30	15	-	-
Total			15	2	3	20	500	350	115	60	30	90	45
Fourth Semester													
3010414601	Ability Enhancement	English Language and Scientific Temper	3	-	1	4	100	70	23	-	-	30	15
3010411102	Ability Enhancement	Environmental Study-II	3	-	1	4	100	70	23	-	-	30	15
3010412101	Core	Software Engineering	3	-	1	4	100	70	23	-	-	30	15
3010422102	Core	DBMS with Oracle	3	1	-	4	100	70	23	30	15	-	-
3010422103	Core	Programming with Visual Basic .NET	3	1	-	4	100	70	23	30	15	-	-
Total			15	2	3	20	500	350	115	60	30	90	45

Fifth Semester													
3010513801	Ability Enhancement	Bhasha Kaushal Avam Sanchar Sadhan	3	-	1	4	100	70	23	-	-	30	15
3010512101	Skill Enhancement	Computer & Information Technology Basics	3	-	1	4	100	70	23	-	-	30	15
3010512102	Core	Data Warehousing & Mining	3	-	1	4	100	70	23	-	-	30	15
	Discipline Specific Elective	Elective-I	3	1	-	4	100	70	23	30	15	-	-
	Discipline Specific Elective	Elective-II	3	1	-	4	100	70	23	30	15	-	-
Total			15	2	3	20	500	350	115	60	30	90	45
Sixth Semester													
3010612101	Core	Software Testing & Project Management	3	-	1	4	100	70	23	-	-	30	15
	Discipline Specific Elective	Elective-III	3	-	1	4	100	70	23	-	-	30	15
	Discipline Specific Elective	Elective-IV	3	1	-	4	100	70	23	30	15	-	-
3010632101	Research Component	Project Work	-	8	-	8	200	-	-	200	100	-	-
Total			9	9	2	20	500	210	69	230	115	60	30

Evaluation Scheme

- Minimum marks required to pass in each theory paper in a semester shall be 33% .
- Minimum marks required to pass in a semester shall be 50% in each Practical/Assignments/Fieldwork Project /Dissertation.

LIST OF ELECTIVES

***Note** - Students need to select one paper from each elective.

Electives for Fifth Semester			Electives for Sixth Semester		
Codes	Nature of the Course	List of Electives	Codes	Nature of the Course	List of Electives
Elective - I			Elective - III		
3010552101	Discipline Specific	Multimedia Systems	3010642101	Discipline Specific	Information Technology Trends
3010552102	Discipline Specific	Computer Graphics	3010642102	Discipline Specific	E-Commerce
Elective - II			Elective - IV		
3010552103	Discipline Specific	Data Structure with C++	3010652103	Discipline Specific	Web Development through PHP & MySql
3010552104	Discipline Specific	Accounting with Tally	3010652104	Discipline Specific	Programming with ASP.Net & C#.Net



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- First Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION (B.C.A.)

SUBJECT: Hindi Bhasha aur Sanrachna

Subject Code: 3010113801

Theory Max. Marks: 70

Theory Min. Marks: 23

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Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- First Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Entrepreneurship Development - I

Subject Code: 3010112901

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVES:

To enable the students to understand the theoretical and practical aspects of Entrepreneurship Development and Small Scale Industries.

UNIT I

Introduction: Concept of Entrepreneur, Concept and process of Entrepreneurship, Function of Entrepreneurs, Types of Entrepreneurs, Entrepreneurial Decision Process, Behavioural Characteristics of Entrepreneurs, Theories of Entrepreneurship, Role and Importance of Entrepreneurship in Economic Development.

UNIT II

Promotion of a Venture; Opportunities analysis; External environmental analysis economic, social, and technological; Competitive factors; legal requirements for establishment of a new unit, Financing the New Venture; Venture capital sources and documentation.

UNIT III

Entrepreneurial Behavior: Innovation and Entrepreneur; Entrepreneurial behavior and psycho-Theories, Ethics and Social Responsibility of Entrepreneur.

UNIT IV

Entrepreneurial Development Programmes (EDP): EDP, Their role, relevance, and achievements; Role of Government in organizing EDPs; Critical evaluation.

UNIT V

Role of Entrepreneur : Role of an entrepreneur in economic growth as an innovator, generation of employment opportunities, complementing and supplementing economic growth , bringing about social stability and balanced regional development of industries ; Role in export promotion and import substitution ,forex earnings ,and augmenting and meeting local demand.

OUTCOMES: After studying this subject students will able to understand the theoretical and practical aspects of Entrepreneurship and establishment of a new venture.

TEXT BOOK

- Varshney, G.K. (2014), Fundamental of Entrepreneurship. Sahitya Bhawan Publications, 2nd Edition, 2014.



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Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- First Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Discrete Mathematics

Subject Code: 3010112101

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- Simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic.
- Express a logic sentence in terms of predicates, quantifiers, and logical connectives
- Apply the operations of sets and use Venn diagrams to solve applied problems; solve problems using the principle of inclusion-exclusion.
- Determine the domain and range of a discrete or non-discrete function, graph functions, identify one-to-one functions, perform the composition of functions, find and/or graph the inverse of a function, and apply the properties of functions to application problems.

UNIT-I

SET THEORY - Set and Subsets, Operations on Sets, Countable and Uncountable Sets, The Principle of Inc Inclusion-Exclusion, Derangements, and Propositions.

PERMUTATION, COMBINATIONS, DISCRETE PROBABILITIES - The rules of sum and product, Permutations, Combinations, Binomial and Multinomial Theorems, Combinations with Repetitions, Probability, Random Variables & Probability Distributions, Repeated Trials.

UNIT-II

RELATION AND FUNCTION- Cartesian (Cross) Product of Sets, Relation, Operation on Relations, Properties of Relation as Binary Relation on a Set, Two Important Relations, Partial Ordered Relation, Lattices, Functions - Mappings, Types of Functions, Cardinality of Set, Composition of Relation and Function, Composition of Function, Existence of Inverse Function (Mapping), Set Image/Preset Image of Function.

UNIT-III

Graph - Introduction and basic concepts of directed and undirected graphs.Walks, Paths, Circuits for directed and undirected graphs.

Recurrence relations - First-order Recurrence Relations, Second-order Homogeneous Recurrence Relations, Third and higher-order Homogeneous Recurrence Relations, Non-homogenous Recurrence Relations of second and higher orders, Method of Generating Functions.

UNIT-IV

Groups - Introduction of Groups, Properties of Groups, Subgroups, Normal Subgroups, Cosets of Subgroups, Concepts of Homomorphism, of Groups, Ring, Properties of Rings.

UNIT-V

Discrete Numeric Functions and Generating Functions -Discrete Numeric Functions, Manipulation of Numeric Functions, Asymptotic Behavior of Numeric Functions, Binomial Coefficients.

OUTCOMES:-

- Write an argument using logical notation and determine if the argument is or is not valid.
- Demonstrate the ability to write and evaluate a proof or outline the basic structure of and give examples of each proof technique described.
- Understand the basic principles of sets and operations in sets. Prove basic set equalities.
- Apply counting principles to determine probabilities.

w.e.f: July 2018

- Demonstrate an understanding of relations and functions and be able to determine their properties.
- Demonstrate an understanding of Graph.

TEXT BOOK:-

1. Discrete Mathematics By Anjana Gupta
2. Discrete Mathematical Structure With Application To Computer Science: J P Tremblay
- 3 Discrete Mathematics By Swapan Kumar Sarkar
4. Applied Discrete Structure from Comp.Sc N.Delhi Galgotia Pub.



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SEMESTER- First Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Fundamentals of Computers & office package

Subject Code: 3010122102

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

Making the students understand and learn the basics of computer how it computes, to make familiar with the part and function of computer, its types , how to use computer, its characteristics, its usage, limitations and benefits etc.

UNIT-I

Introduction - Introduction, Limitations of computers, Fundamental uses of computers, Types of Computers, Generations of Computers.

Personal Computer - Introduction, Components of personal computers, Evolution of PCs.

Boolean Algebra and Logic Gates - Introduction, Boolean Algebra And Operator, OR Operator, NOT Operator, Basic Postulates of Boolean Algebra, Basic Logic Gates.

Number System - Introduction, Digital and Analog Operations, Binary Data, Binary Number System, Decimal Number System, Octal Number System, Hexadecimal Number System, Coding System.

UNIT-II

Data Representation and Binary Arithmetic - Introduction, Bits, Nibbles, Bytes and Words, Data Representation, Coding system, Binary Arithmetic, Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division.

Input Devices - Introduction, Input Device,

Output Devices - Introduction, Output Devices, Soft Copy Vs Hard Copy Output, Monitor, Printers, Plotter.

Central Processing Unit - Introduction, What is Central Processing Unit, Arithmetic And Logic Unit, Control Unit, Registers, Instruction set, Processor Speed.

Storage Devices - Introduction, Storage and its needs, Primary Storage, Secondary Storage.

UNIT-III

Basics of Software- Introduction, What Does Software Stand For ?, Needs of software, Types of software, Open Source Software,

Operating System - Introduction, Operating System, Why an Operating System, Functions of Operating System, the Booting Process, Types of Reboot,

Disk Operating System - Introduction, What is DOS?, Functions of DOS, Versions of DOS, DOS Commands , Important Internal Commands of DOS, Important External Commands of dos, Executable Vs Non-Executable Files In Dos

Programming Languages - Introduction, Data, information And Knowledge, Characteristics of Information, What is a program?, What is a Programming language?, Programming approaches, Types of Programming Language.

UNIT-IV

Computer Virus - Introduction, Virus, History, Mechanism of virus, Types of Computer Virus, Related Concepts: Anti Virus Programs,

Communication and IT - Introduction, Computer Network, Communication Process, Communication Types, Transmission Media, Wireless Media, Communication Channels/Media, Modem, Characteristics of a Modem, Types of Modem

Networks - Introduction, Internet Vs Intranet, Types of Network, Topology, Types of Connectivity, Network Devices.

UNIT-V

Know the Windows Operating System - Introduction, What is Windows XP ?, Evolution of Windows Operating System, Features of Windows XP, What's New in Windows XP, Windows and Its Elements, Accessories, Files and Folders

Microsoft Office Package – Introduction about MS Word ,Ms Excel, Ms PowerPoint.

OUTCOMES:-

- An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.
- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Demonstrate the basic mechanics of creating Word documents ,presentation and excel calculation for office use.

TEXT BOOK:-

- 1.Computer fundamental: by V .Rajaraman; PHI
- 2:Fundamental Of IT :Leon and Leon; Leon Tec World
- 3: Computer Fundamental (3rd Ed) Sinha,P.K.
- 4: Fundamental of Information Technology ,Shritvastava Cheton
- 5: Fundamental of Computer Programming & Information Technology Sharma,G.& Singh G. Delhi S. K. Kataria & Sons
- 6: Fundamentals of Computers, Murthy,C.S.V. Delhi S. K. Kataria & Sons.
7. MS office XP for Everyone, Saxena Sanjay, New Delhi Vikas Publication



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SEMESTER- First Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Programming in C

Subject Code: 3010122103

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

1. Develop a greater understanding of the issues involved in programming language design and implementation
2. Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms
3. Implement several programs in languages other than the one emphasized in the core curriculum (Java/C++)
4. Understand design/implementation issues involved with variable allocation and binding, control flow, types, subroutines, parameter passing
5. Develop an understanding of the compilation process.

UNIT-I

Principles of Programming- Introduction to Programming, Program Concept, Characteristics of Programming, Stages in Program Development, Algorithms, Flowcharts, Symbols, Rules.

Programming Techniques and Logic- Introduction, Introduction to programming techniques, Top-down approach or technique, Bottom-up approach or technique, Unstructured technique of programming, Structured technique of programming, Modular technique of programming, Debugging , Syntax Errors, Logical Errors, Runtime Errors, Program Testing.

UNIT-II

Introduction to 'C'- Introduction, Structure of a C program, 'C' Tokens, Keywords, Identifiers, 'C' Constants, Variables in C, Data Types, Operators, Type conversion in expressions , (Implicit and Explicit type conversion)

Decision Making and Branching- Introduction, Unformatted I/O functions, Formatted input using scanf() function, Formatted output using printf(), Branching statements, The if-else statement, The nested if-statement, The switch statement.

UNIT-III

Looping Statements- Introduction, for-statement, while-statement, do-while statement, Difference between while-loop and do-while loop, Nested loops, Jumps in loops.

Arrays- Introduction, Single-dimensional arrays, Reading and writing single dimensional arrays, Two-dimensional arrays (Multi-dimensional arrays), Reading-writing two-dimensional arrays.

Strings- Concepts of string, Strings in C language, Initializing strings, String input/output functions, Arrays of strings, String handling functions.

UNIT-IV

User Defined Functions- Introduction, Elements of user-defined functions, Categories of functions, passing parameters to functions, Arrays in functions, Nesting of Functions, Recursion, Command Line Arguments.

Structure and Union- Introduction to structures, Structure and its definition, Structure declaration, Structure variables, Structure initialization, Accessing structures, Nested structures, Array of structures, Structures and functions, Passing structures through pointers, Uses of structures, Union and its definition

Debugging- Common Programming Errors, Program Testing and Debugging, Types of Errors.

UNIT-V

Pointers- Introduction, Pointer concepts, Pointer variable, accessing variables through pointers, Pointer declaration and Definition, Initializing a pointer variable, Pointers to Pointers, Pointer applications, Memory allocation functions.

w.e.f: July 2018

File Handling- Introduction to file handling, File system basics, File structure, FILE pointer, Opening and closing a file, File handling functions, File types, Text and Binary, Input / Output operations on file, Reading a character using getc(), Writing a character using putc(), Using feof(), Working with string using fputs() and fgets(), Using fprintf() and fscanf(), Using fread() and fwrite(), Direct Access file, fseek().

OUTCOMES:-

1. An ability to write structured program using C language.
2. An ability to understand common syntax errors and logical errors in program with C.
3. An ability to understand concept of loops, Arrays, function, structure and file handling.
4. An ability to solve aptitude questions based on C language.

TEXT BOOK:-

- 1-Let us C by yashwant Kanetkar(BPB Pub)2
2. Programming in C ,E Balagurusamy(TMh)
- 3.Programming in C by Ghosh(PHI)
- 4.Computer programming in c by V.Rajaraman(PHI)
5. Programming in C by Byron Gottfrid(TMh)



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SEMESTER- Second Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: English Language And Indian Culture

Subject Code: 3010214601
Theory Max. Marks: 70
Theory Min. Marks: 23

COURSE OBJECTIVE: The main objective of the subject is to provide knowledge about Indian literature and basic use to vocabulary in language.

UNIT I

1. Amalkanti : NirendranathChakrabarti
2. Sita : Toru Dutt
3. Tryst with Destiny : Jawaharlala Nehru
4. Delhi in 1857 : MirzaGhalib
5. Preface to the Mahabharata : C., Rajagopalachari
6. Where the Mind is Without Fear : Rabindranath Tagore
7. A Song of Kabir : Translated by Tagore
8. Satyagraha : M.K. Gandhi
9. Toasted English : R.K. Narayan
10. The Portrait of a Lady : Khushwant Singh
11. Discovering Babasaheb : Ashok Mahadevan

UNIT II

Comprehension

Unit III

Composition and Paragraph Writing (Based on expansion of an idea).

UNIT IV

Basic Language Skills : Vocabulary – Synonyms, Antonyms, Word Formation, Prefixes and Suffixes, Words likely to be confused and Misused, Words similar in Meaning or Form, Distinction between Similar Expressions, Speech Skills.

UNIT V

Basic Language Skills : Grammar and usage – The Tense Forms, Propositions, Determiners and Countable/Uncountable Nouns, Verb, Articles, Adverbs, Adjectives

COURSE OUTCOMES: After completion of this subject students will get the knowledge about cultural perspective of Indian literature and able to use proper vocabulary in their language.



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SEMESTER- Second Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Entrepreneurship Development - II

Subject Code: 3010212901
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVES:

To enable the students to understand the theoretical and practical aspects of entrepreneurship development with a major focus on development of small scale industries.

UNIT I

Entrepreneurship – Meaning, Concept, Characteristics of entrepreneur.

UNIT II

Types of entrepreneurship, importance and views of various thinkers (Scholars).

- Formation of goals, How to achieve goals.
- Problems in achieving targets and solution.
- Self-motivation, elements of self-motivation and development
- Views of various scholars, evaluation, solutions.
- Leadership capacity: Its development and results.

UNIT III

Projects and various organizations (Govt., non-Govt), Govt. Projects, Non-Govt. projects. Contribution of Banks, their limitations, scope.

UNIT IV

Functions, qualities, management of a good entrepreneur, Qualities of the entrepreneur (Modern and traditional), Management skills of the entrepreneur, Motive factors of the entrepreneur

UNIT V

Problems and Scope of the Entrepreneur:

- Problem of Capital
- Problem of Power
- Problem of registration
- Administrative problems

OUTCOMES: After studying this subject student will able to understand the development aspect of entrepreneurs and will also get insights about working and development of small scale industries.

TEXT BOOK

- Gupta, S.L. and Mittal, A. (2015), Development of Entrepreneurship. International book house pvt. Ltd Publication, 2015
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Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Second Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Digital Computer Organization

Subject Code: 3010212101
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- To study the basic organization and architecture of digital computers (CPU, memory, I/O, software).
- Discussions will include digital logic and microprogramming.
- Understanding and utilization of digital computers.

UNIT-I

Digital computer and digital system: - Binary number system: number base conversion. Compliments: one's, two's, 9's and 10's complements. Binary code: Gray BCD, ASCII, and error detection code.

Logic Gates: - AND, OR, NOT, EX-OR, Universal gate. Logic Circuit. Boolean function: Rules and simplification, simplification of Boolean function using map method, don't care condition.

UNIT-II

Combinational Circuits: Adders, Subtractors, Multiplexer, Demultiplexer, Decoder, Encoder.

Sequential Circuit: Flip-Flop: RS, Clocked RS, JK, D flip-flop, and Master-slave flip-flop.

Register- Introduction, Shift register, serial Transfer & parallel Load.

Counters- Ripple Counter (Asynchronous), Synchronous Counters.

UNIT-III

Register Transfer, Bus and Memory transfer, Micro operation: Logic and Shift.

Instruction code: Instruction code, Direct and Indirect address. Interrupt and Interrupt cycle.

Machine Language: Assembly language, assembler. Subroutines.

UNIT-IV

Control processing unit: general register organization, stack organization, polish notation.

Instruction Format: Three Address instruction, Addressing modes. RISC and CISC, Pipeline and its types.

UNIT-V

Computer Arithmetic: Addition and Subtraction with H/W algorithm, Multiplication algorithm, Booth Multiplication. Mode of transfer: DMA, DMA controller.

Memory Organization: Memory Hierarchy- Main memory, Auxiliary, Associative, cache, and Virtual memory.

OUTCOMES:-

- An ability to perform computer arithmetic operations.
- An ability to understand control unit operations.
- An ability to design memory organization that uses banks for different word size operations.
- An ability to understand the concept of cache mapping techniques.
- An ability to understand the concept of I/O organization.
- An ability to conceptualize instruction level parallelism.

TEXT BOOK:-

1. Computer Architecture & Parallel Processing TMH Sigapur
- 2.W.H Gothman "Digital Electronics"PHI
- 3.R.P Jain "Modern digital electronicsTMH
- 4.Floyd ,Digital fundamental"UBS
5. M.M Mano, Digital logic and computer design"PHI
- 6.Milman taub, pulse,digital and Switching waveformsTMH.



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SEMESTER- Second Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Object Oriented programming with C++

Subject Code: 3010222102

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- To understand the concept of data abstraction and encapsulation.
- To learn how to overload functions and operators in C++.
- To learn how containment and inheritance promote code reuse in C++.
- To learn how inheritance and virtual functions implement dynamic binding with polymorphism.
- To learn how to design and implement generic classes with C++ templates.
- To learn how to use exception handling in C++ programs.

UNIT-I

Overview of C++ - Overview of C++, Object oriented programming paradigm, Basic concepts of OOP, Advantages/Benefits of OOP.

C++ Environment- Prototype of main () function, i/o operator, manipulator, comments, data types.

Creating and Compiling C++ Programs - Structure of a C++ program, C++ tokens, Type conversion in expressions.

Decision Making and Branching - Introduction, Mathematical Functions, Branching statements, looping Statements, Nested loops.

UNIT-II

Arrays and Functions- Arrays, Single-dimensional arrays, Two-dimensional arrays (Multi-dimensional arrays), User Defined Functions, Elements of user-defined functions, Return values and their types, Function calls, Categories of functions, Passing parameters to functions, Recursion, Command Line Arguments, Storage Class Specifiers.

Classes and Objects - Classes, Structures and classes, Friend function, Inline function, Scope resolution operator, Static data members, Static member functions, passing object to functions, Returning objects.

UNIT-III

Array, Pointers, References and the Dynamic Allocation Operators - The this pointer, Pointer to Derived Types,

Constructors and Destructors - Introduction, Constructors, Default Constructor, Parameterized constructors, Copy Constructors, Multiple Constructors in a class, Constructors with default arguments, Default Arguments, Destructors.

Function and Operator Overloading - Function overloading, operator Overloading Constructor Overloading.

UNIT-IV

Inheritance - Introduction to inheritance, Features or Advantages of Inheritance, Type of Inheritance , Base Classes and Derived Classes, Base Class Access Control, Inheriting Multiple Base Classes, Constructors, Destructors, Passing Parameters to Base Class Constructors.

UNIT-V

Polymorphism - Polymorphism, Types of Polymorphism, Virtual Functions and Polymorphism, Pure Virtual Functions.

The C++ I/O System Basics - The C++ I/O System basics, C++ predefined streams, Using width(), Using precision(), Using fill(), Using Manipulators to format I/O, File handling function, Random access file.

OUTCOMES:-

- An ability to understand the features of C++ supporting object oriented programming
- An ability to understand the relative merits of C++ as an object oriented programming language

w.e.f: July 2018

- An ability to understand how to produce object-oriented software using C++
- An ability understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism.
- An ability understand advanced features of C++ specifically stream I/O, templates and operator overloading

TEXT BOOK:-

1. OOPs with C++:E Balagurusamy
- 2.Programming in C++ by hemant kumar goyal
3. OOPs with C++ Robert laphore
- 4.Programming with C++ by D Ravichandran.
5. Let us C++ Yashwant Kanetkar.



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SEMESTER- Second Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Internet Programming

Subject Code: 3010222103
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- To learn web history, website organization, HTML, graphics use, page and site design.
- To learn XML, CSS, and JavaScript.
- To use Notepad and a web editor to create code, and an FTP program to publish.
- To produce a website to showcase future web work.
- Learn to make E-Commerce

UNIT-I

ABC Of Internet - Introduction, What is Internet Actually ?, Growth of Internet , Owner of Internet, Internet Service Provider, Arpanet and Internet history of the World Wide Web, Internet Tools, Basic Internet Terminologies, net etiquette, Applications.

World Wide Web - Introduction, Basic Features, Evolution of the WWW, Mechanism of the World Wide Web, WWW Browsers, URL (web address), Domain Name System (DNS), Search Engines, Searching The Web, Site Specific Search Tools.

Electronic Mail -Introduction, What is an E-mail?, Concept of Email, How Does Email Work ?, Structure of an E-mail, Starting, Setting up a Mail Account, Web Based Emails, E-mail Protocols, Mailing List .

UNIT-II

Hyper Text Markup Language -Introduction, Concept of Hyper Text Markup Language, Versions of HTML, HTML Editors, Elements of HTML, Document Layout, Cascading Style Sheet.

Web Designing With FrontPage 2002 -Introduction, What is FrontPage ?, Starting FrontPage, Front Page Window And Its Elements, Creating A Website, Creating Tables In FrontPage, Formatting A Table, Using Graphics In A Web Page.

Web Hosting And Publishing Concepts-Introduction, What is the Need of a Website, Types of Websites, Components of Web Publishing, Web Hosting, Web Design and Development.

UNIT-III

Introduction To JavaScript- Introduction, What is JavaScript ?, Role of Scripting, JavaScript Versus Java, JavaScript Versions, Error Handling in JavaScript Program, Creating a Simple External JavaScript Program, Creating a simple HTML page.

Elements of JavaScript -Introduction, Elements of JavaScript), Data Type Conversion in JavaScript, Using Special Characters in Strings, Alert Boxes, Confirm Alert Box, Prompt Boxes.

Variables & Functions-Variables in JavaScript, Constants, Function, Working with Objects, Object Properties, Object Methods.

UNIT-IV

Statements in javascript -Introduction, Statements, Block Statement, Conditional Statements, The if...else Statement, The switch Statement , Loop Statements , The for Statement , The do...while Statement The while Statement , The infinite loop, The label Statement , The break Statement , The continue Statement .

Using forms in javascript -Introduction, Creating the form, Getting a value from a form object, setting a value in a form object, Reading other form object values, Using Hidden Text Boxes, Using Radio Buttons, Using Check Boxes, Using Text Areas.

UNIT-V

Introduction to Electronic Commerce- Introduction, Electronic Commerce, Technical and Organizational Aspects, Advantages of E-Commerce, Disadvantages of E-Commerce, Components of

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E-Commerce, Internet and E-Commerce, Types Of E-Commerce, Constraints To E-Commerce, I.T Act 2000.

Electronic Payment System and Electronic Security- Introduction, Electronic Payment System, Types of Electronic Payment System, Risks from Mistakes and Disputes: Consumer Protection, Managing Information Policy, Managing Credit Risk, Electronic Security.

OUTCOMES:-

- Define modern protocols and systems used on the Web (such as HTML, HTTP, URLs, CSS, XML)
- Explain the functions of clients and servers on the Web, and describe the strengths and weaknesses of the client-server internet approaches to web design and implementation
- Program, access, and manipulate data through the adoption of accepted standards, mark-up languages, client-side programming, and server-side programming
- Design and implement an interactive web site(s) with regard to issues of usability, accessibility and internationalisation
- Design and implement a client-server internet application that accommodates specific requirements and constraints, based on analysis, modelling or requirements specification
- Justify and explain particular internet application concepts, relevant alternatives and decision recommendations, including design considerations for internet security

TEXT BOOK:-

1. Internet & Web Designing, Khuran, Rohit N.D. Macmillan
2. Internet & Web Technology Singh, Umesh Ku., Indore Imager
3. Step by Step Internet & You, Singh, Umesh Ku. N.D. MBD Int
4. Internet & Web Technology Kamal, Raj. New Delhi Tata Mc Graw Hill
5. Web Designing : With HTML, Java Vats, Lokesh N. Delhi Cyber Tech. Pub.



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Third Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Hindi Bhasha aur Samvedana

Subject Code: 3010313801
Theory Max. Marks: 70
Theory Min. Marks: 23

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Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Third Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Environmental Study - I

Subject Code: 3010311102
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:

The objective of this subject is to develop a basic understanding about elements of environment science among the students.

UNIT – I Study of Environmental and ecology :

- (a) Definition and Importance.
- (b) Environmental Pollution and problems.
- (c) Public participation and Public awareness.

UNIT – II Environmental Pollution :

- (a) Air, water, noise, heat and nuclear pollution.
- (b) Causes, effect and prevention of pollution.
- (c) Disaster management – Flood, Earthquake, cyclones and landslides.

UNIT – III Environment and social problems :

- (a) Development – non-sustainable to Sustainable.
- (b) Energy problems of cities.
- (c) Water preservation – rain-water collection.

UNIT – IV Role of mankind in conserving natural resources :

- (a) Food resources – World food problem.
- (b) Energy resources – increasing demand for energy.
- (c) Land resources – Land as resources.

UNIT – V Environment conservation laws :

- (a) Conservation laws for air and water pollution.
- (b) Wildlife conservation laws.
- (c) Role of information technology in protecting environment & health.

OUTCOMES:

After studying this paper students will be able to understand the fundamentals of environment science along with various environmental elements and basic conservation laws.



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SEMESTER- Third Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Operating Systems

Subject Code: 3010312101
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

1. To learn the fundamentals of Operating Systems.
2. To learn the mechanisms of OS to handle processes and threads and their communication.
3. To learn the mechanisms involved in memory management in contemporary OS
4. To gain knowledge on distributed operating system concepts that includes architecture, Mutual exclusion algorithms, deadlock detection algorithms and agreement protocols.
5. To know the components and management aspects of concurrency management.
6. To learn programmatically to implement simple OS mechanisms.

UNIT-I

Operating Systems: Overview -Introduction of Operating System, Types of Operating System, System Components and it's services, System Calls, System Programs, Structure, Design and, Implementation, Operating System Generation.

Process : Concept, Description and Control -Concept of process, Process state model, Process description - PCB, Process control, Threads, Threads in Linux.

UNIT-II

Process Scheduling - Types of Scheduler, Scheduling Criteria, Uniprocessor, Scheduling, Multiprocessor Scheduling, Algorithm Evaluation, Process Scheduling in Linux.

Concurrency - Introduction to concurrency, Critical section problem, Mutual Exclusion solutions, S/w approach, H/w support, semaphore, monitor, Classical problem of synchronization.

Deadlock - Deadlock Characterization, Deadlock Prevention, Deadlock Detection, Deadlock Avoidance, Combined Approach.

UNIT-III

Protection - Goal of Protection, Protection Domains, Access Matrix, Implementation of Access Matrix, Revocation of Access Rights, Language Based Protection.

Security and Encryption - Security Problem, User Authentication, Program Threats, System Threats, Securing System and Facilities, Encryption & Decryption – Cryptography.

UNIT-IV

Memory Management -Memory Management Requirements, Address Space, Linking and Loading, Swapping, Partitioning, Paging, Segmentation.

Virtual Memory - Introduction to Virtual Memory, Demand Paging, Page Replacement, Thrashing, Demand Segmentation.

UNIT-V

Input Output Systems - Input - Output Devices, Hardware Support for I/o, I/O Communication Techniques, I/O Software Device Drivers, Performance Consideration.

Disk Structure - Introduction to Disks, Disk Scheduling, Disk Management, Disk Reliability, Swap Space Management, Stable Storage Implementation.

File Management - File Concepts, Directory structure, File Sharing, Protection, File system in Linux.

OUTCOMES:-

- Analyze the structure of OS and basic architectural components involved in OS design.
- Analyze and design the applications to run in parallel either using process or thread models of different OS.
- Analyze the various device and resource management techniques for timesharing and distributed systems.

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- Understand the Mutual exclusion, Deadlock detection and agreement protocols of Distributed operating system.
- Conceptualize the components involved in designing a contemporary OS.

TEXT BOOK:-

1. Operating system concepts silberschatz A and Peterson JL,PE-LPE
2. Operating system concept & design Milenkovic M Mc graw hill
3. Operating System H.M Deital
4. Operating system, stalling William,,Maxwell Mc millan int edition
- 5 Operating System, Gupta Rajeev Kumar Chaturvedi Arun Kumar



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SEMESTER- Third Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Computer Communication & Networks

Subject Code: 3010322102
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- Build an understanding of the fundamental concepts of computer networking.
- Familiarize the student with the basic taxonomy and terminology of the computer networking area.
- Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.
- Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.

UNIT-I

Introduction To Networking-Introduction to Network, Network, Computer Networks, Need of Network Uses of Computer Network, Applications of networks, Network Criteria, Network Hardware and Software,

Network Types-Client, server & peers, Various Types of Servers.

Transmission Technology-Transmission technology, Data can be analog or digital, Analog and Digital Transmission, Asynchronous & synchronous transmission, Types of Communication Modes, Baseband and Broadband Transmission, Comparison of Baseband and Broadband Signaling.

UNIT-II

Transmission Media-Transmission Media, Classification of Transmission Media, Comparison of Guided and Unguided Media, Twisted Pair (TP) Cable, Coaxial Cable, Fiber Optic Cable (FOC), Unguided Media, Radio Frequency Characteristics, Microwave Transmission, Applications of Infrared Transmission.

Network Topology -Network Topology, Types of Network, Local Area Network (LAN), Metropolitan Area Networks (MAN), Wide Area Networks (WAN), Satellite Networks, Wireless LAN.

Network Adapters- Network adapters, Network interface cards (NIC), Multiple Access Protocol, ALOHA, Carrier Sense Multiple Access (CSMA), CSMA/CD [Carrier Sense Multiple Access/Collision Detection], Collision Free Protocols , Limited Contention Protocol, Controlled Access , Channelization, Code Division Multiple Access (CDMA).

UNIT-III

The Theoretical Network Model - OSI, OSI Model, open system interconnection model (OSI) Layered Architecture of the OSI Reference Model, Functions of the ISO/OSI Layers, Summary of OSI Layer functions.

Real World Networks-Real world network : Ethernet, Fast Ethernet , FDDI (Fiber Distributed Data Interface), Network Operation, ATM (Asynchronous Transfer Mode), ATM Service Categories, ARCNET , AppleTalk.

IEEE 802 Standards -IEEE 802 standards, IEEE 802.3 (CSMA/CD) , IEEE 802.4 (Token Bus), IEEE 802.5 [Token Ring] , IEEE 802.5 cable standards, Comparison between IEEE 802.3,802.4 and 802.5, Compare Token Passing with CSMA/CD.

Connectivity Devices-Networking scaling, Connectivity Devices, Modems, Transceiver , Repeaters, Hubs, Bridges, Routers.

UNIT-IV

TCP/IP Reference Model-Overview of TCP/IP reference model, Introduction to TCP/IP :, TCP/IP Protocols, User Datagram Protocol, The Internet Control Message Protocol (ICMP), The Address resolution Protocol (ARP), Reverse Address Resolution Protocol (RARP), Simple Mail Transfer Protocol (SMTP), File Transfer Protocol, Dynamic Host Configuration Protocol (DHCP), Remote Login (rlogin), The Network File System (NFS).

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IP Addressing & Subnet- Introduction to IP, Domain Name System (DNS), URL (Uniform Resource Locator), Electronic Mail, E-mail address, Subnet & Subnet masks.

Network Security- Network Security, The Need for Security, common threats, security barriers in network pathways, Attacks, Classification of Attacks, Specific Attacks.

Approaches to Network Security-Levels of Security, Approaches to network security, Security Services.

UNIT-V

Viruses & Security Threats-Virus & Threats, Malicious Programs, Types of Viruses.

Firewalls-Firewalls, Firewall Design Principles, Types of Firewalls, Firewall Configurations.

Encryption & Decryption- Encryption & Decryption - Cryptography, Terminology, Classification of Cryptography, Substitution Ciphers, Steganography, Steganography vs Cryptography, Public key encryption, Comparison of Symmetric and Asymmetric Key Cryptography.

Digital Signature-Digital Signature, Requirements of Digital Signature, Direct Digital Signature, Authentication Protocols, Symmetric Encryption Approach, Public-Key Encryption Approach, Digital Signature Standard.

OUTCOMES:-

- Describe the general principles of data communication.
- Describe how computer networks are organized with the concept of layered approach.
- Describe how signals are used to transfer data between nodes.
- Implement a simple LAN with hubs, bridges and switches.
- Describe how packets in the Internet are delivered.
- Analyze the contents in a given Data Link layer packet, based on the layer concept.
- Design logical sub-address blocks with a given address block.
- Decide routing entries given a simple example of network topology
- Describe what classless addressing scheme is and sub netting.
- Describe how routing protocols work.

TEXT BOOK:-

1. Computer Networking & Data Communication Indore kamal Prakashan
- 2 Data Communication Q Computer Networks Gupata,Manoj Ku
- 3 Computer Networking Tanenbaum,A.S
4. Computer Networking With IP & Tech , Stallings,Williams
5. Data Communication Gupta Prakash C N.Delhi Prentice Edu.



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Third Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Programming with JAVA

Subject Code: 3010322103
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- To gain knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc.
- To understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc and exception handling mechanisms.
- To understand the principles of inheritance, packages and interfaces.

UNIT-I

Overview Of JAVA-Introduction, Programming paradigm, OOPS Concepts, Evolution of Java, Features of Java, C++ Vs Java, Java and Internet, Java and WWW, Java support systems, Java Environment.

Key Features Of JAVA-Introduction, Java Program Structure, Simple Java Program, Tokens, Java Statements, Java Virtual Machine, Constants and Variables, Declaration of Variables, Scope of Variables, Data types, Symbolic Constants, Type Casting, Command line arguments.

UNIT-II

Operators-Operators, Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Increment and Decrement, Conditional Operators, Special Operators, Assignment Operators, Expression & its evaluation.

Control Statements-Introduction, Control Statements, Sequence Control Statement, Decision Control Statement, Case Control Statement, Iteration Control Statement, Jump in loops, Labeled Loops.

Arrays And Strings-Introduction, Array, Need of Array, Types of Array, One dimensional Array, Two-Dimensional Array, Multidimensional Array, Strings, Concatenation of Strings, Methods for String Comparison, Methods for searching Strings, Changing the case of characters, String Buffer.

UNIT-III

Classes-Introduction, Defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class members, Call by value and call by reference, Recursion, Access Control, Constructors, Method overloading, Constructor Overloading, Garbage Collection, finalize() method, this keyword, Static Members, Nesting of Methods.

Inheritance-Inheritance, Single Inheritance, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Using Super, Constructor, Order of Execution in Inheritance, Overriding methods, Final variables and methods, Final Classes, Abstract methods and Classes.

UNIT-IV

Wrapper Classes And Vectors- Introduction, Wrapper Classes, Number Class, Byte class, Short class, Integer class, Long class, Converting Numbers to and from Strings, Float class, Double class, Character class.

Interface & Packages - Introduction, Interfaces, Defining interface, Implementing interface, Accessing interface method, Accessing interface variable, Extending interfaces, Packages, System packages, Using system packages, User defined packages, Adding class to a package, Accessing and using package.

UNIT-V

Exception Handling- Introduction, Exceptions, Using try & catch, Multiple catch clauses, Finally, Throw, Throws.

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Multithreading- Introduction, The Main Thread, Creating Threads, Life cycle of Thread, Using Threads Methods, Thread Priorities, Stopping and Blocking a thread, Thread Exceptions, Using is Alive() and join(), Synchronization.

Applets- Introduction, Local & remote applets, Applet vs applications, Writing applets, Life cycle of an applets, Creating source code of applet, Creating an executable applet, Creating applet tag, Adding applet tag to html, Running the applet, Detailed form of applet tag, Passing parameters to applet, Aligning the display, HTML tags, Getting input from user.

OUTCOMES:-

- Identify classes, objects, members of a class and relationships among them needed for a specific problem.
- Write Java application programs using OOP principles and proper program structuring.
- Demonstrate the concepts of polymorphism and inheritance.
- Write Java programs to implement error handling techniques using exception handling

TEXT BOOK:-

1. Programing With JAVA Balagurusamy,E
2. Programing With JAVA Hubbard,J.R
- 3 The Complete Reference JAVA tm2 Schidt,Herbert
4. Programing With JAVA CVRU publication
- 5 Mastering JAVA m2,J2 SE 1.4 Zukowski,John N.D.BPB.Pub



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fourth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: English Language and Scientific Temper

Subject Code: 3010414601
Theory Max. Marks: 70
Theory Min. Marks: 23

UNIT I

- | | | |
|----------------------|---|------------------------------------|
| 1. Tina Morries | : | Tree |
| 2. Nissim Ezekiel | : | Night of the Scorpion |
| 3. C.P. Snow | : | Ramanujan |
| 4. Roger Rosenblatt | : | The Power of WE |
| 5. George Orwell | : | What is Science? |
| 6. C.Rajagopalachari | : | Three Questions |
| 7. Desmond Morries | : | A short extract from the Naked Ape |
| 8. A.G. Gardiner | : | On the rule of the road |

UNIT II Comprehension of an unseen passage.

UNIT III Letter Writing : Formal Letters, Informal letters, Applications.

UNIT IV Report Writing.

UNIT V Language Skills

Correction of common errors in sentence structure : usage of pronouns, subject/ verb agreement word order, gender; compound nouns, collective nouns, possessives, articles and prepositions. (advanced)



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Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fourth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Environmental Study - II

Subject Code: 3010411102
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE: The subject provide an interdisciplinary approach to complex environmental problems using basic tools of natural and social sciences including ecosystem, chemistry, biology, economics, political, science and international process.

UNIT I Problem of natural resources

- (a) Problem of water resources – Utilization of surface and ground water, over utilization, flood, drought, conflicts over water, dams-benefits and problem.
- (b) Problems of forest resources – uses and over utilization, deforestation, utilization of timber, dams and its effect on forests and tribes.
- (c) Problems of land resources – Land as a source, erosion of land, man-induced landslides and desertification.

UNIT II Bio-diversity and its protection –

- (a) Value of bio-diversity – Consumable use : Productive use, Social, alternative, moral aesthetic and values.
- (b) India as a nation of bio-diversity and multi-diversity at global, national and local levels.
- (c) Threats to bio-diversity – Loss of habital, poaching of wildlife, man-wildlife conflicts.

UNIT III Human Population and Environment

- (a) Population growth, disparities between countries.
- (b) Population explosion, family welfare Programme.
- (c) Environment and human health.

UNIT IV Multidisciplinary nature of environmental studies :

- (a) Natural resources
- (b) Social problems and the environment
- (c) Eco system.

UNIT V Environmental Wealth :

- (a) Rivers, ponds, fields and hills.
- (b) Rural, Industrial, Agricultural fields.
- (c) Study of common plants, insects and birds.

OUTCOMES: After studying this subject students gains knowledge about complex environmental problems using basic tools of natural and social sciences.

References:

1. Erach Bharucha, Environmental Study, UGC



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SEMESTER- Fourth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Software Engineering

Subject Code: 3010412101
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- This course introduces the concepts and methods required for the construction of large software intensive systems. It aims to develop a broad understanding of the discipline of software engineering.
- It seeks to complement this with a detailed knowledge of techniques for the analysis and design of complex software intensive systems. It aims to set these techniques in an appropriate engineering and management context.
- It provides a brief account of associated professional and legal issues.

UNIT-I

Introduction To Software Engineering -Introduction, reusable software components, what is well engineered software ?, programming and software engineering, what is software engineering ?, goals of software engineering, software processes, software process models, process iteration, other important software models.

Software Project Management -Project management, management activities, project planning, project scheduling, risk management, selecting staff, metrics used for measuring the software cost, Cocomo model.

Software Process And Project Metric -Software quality, metrics for the analysis model, metrics for the design model, metrics for source code, metrics for testing.

UNIT-II

Software Cost Estimation -Introduction, software cost factors, programmer's ability, product complexity, product size, required level of reliability, level of technology, decomposition technique, empirical estimation models, the structure of estimation models.

Software Project Requirements -Software requirements, functional and non-functional requirements, user requirements, system requirements, software requirements document.

Requirements Engineering Process -Requirements engineering process, feasibility study, requirements elicitation and analysis, scenarios, requirements specification, requirements validation.

UNIT-III

Software Prototyping -Software prototyping, prototyping in the software process, rapid prototyping techniques, user interface prototyping.

Analysis Concept And Modeling -Analysis modeling, context model, data modeling concepts, cardinality and modality, flow oriented diagram, data dictionary.

Design Concepts And Principles -Introduction, design within the context of software engineering, design process and design quality, design concepts, information hiding, functional independence, design classes, the design model, software patterns.

UNIT-IV

Software Architecture - Software architecture data design, architectural styles and patterns, mapping the requirements into a software architecture, architectural design.

Designing The User Interface - User interface, input design, end-user considerations for input design, output design, design principles, screens, forms, menu, messages, importance of code, data codification schemes, designing code less systems.

Software Quality Management- Software quality management, role of a software quality manager.

Verification and validation - Verification and validation, software testing, software inspections,, cleanroom software development .

UNIT-V

Software Testing Models -Software testing fundamentals, black-box and white-box testing, white-box testing, basis path testing, control structure testing, black-box testing, object-oriented testing methods.

Software Testing Strategies - The strategic approach, the software testing strategy, strategic issues, unit testing, integration testing, validation testing, system testing, test automation.

Computer Aided Software Engineering (CASE) -Computer aided software engineering (CASE), case workbenches, need of software reuse: types of reuse, reuse.

OUTCOMES:-

- How to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment
- An ability to work in one or more significant application domains
- Work as an individual and as part of a multidisciplinary team to develop and deliver quality software
- Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle
- Demonstrate an ability to use the techniques and tools necessary for engineering practice

TEXT BOOK:-

1. Software Engineering A Practitioner Approach ,Roger S Pressman TMH
2. Object Oriented Modeling & Design , Rumbaugh J Blaha,M Premeralant PHI
3. Software Engineering. Pearson Education Asia 6 Edition.
4. An Integrated Approach To Software Engineering ,Pankaj Jalote Springer Verlag
5. Software Engineering –An Engineering Approach James F Peters And Witold Pedryez Wily And Sons New Delhi 2000



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fourth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: DBMS with Oracle

Subject Code: 3010422102

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- Write SQL code based on ANSI/ISO standards to build database structures
- Update database content with SQL and transaction handling
- Retrieve data with filter conditions and from multiple tables using various types of join
- Process data with row and aggregate functions

UNIT-I

Introduction to DBMS & RDBMS - Introduction to database, Introduction DBMS, Different database models, Structure of DBMS, RDBMS an introduction, Cod's law for RDBMS, Components of RDBMS (kernel/data dictionary).

Introduction to Oracle RDBMS and Client/Server Computing - Introduction to Oracle, The Features of Oracle 9i, The oracle product details, An introduction to client/server computing, Oracle and client/server computing.

Overview of Oracle Architecture - Oracle Architecture, Oracle Files, System and User Processes, Oracle Memory, System Database Object, Protecting Data.

UNIT-II

Introduction to SQL*PLUS -Introduction to SQL, Features of SQL, Components of SQL, Introduction to SQL*PLUS, Features of SQL*PLUS, Execution of SQL*PLUS, Important commands used in SQL*PLUS, Oracle Data-Types.

Working with Tables -Tables - An Introduction, Use of Table In SQL, Viewing The Stored Data In Tables, Filtering Table Data, Updating Data, Deleting Data From Tables, Modifying The Structure Of Tables, Destroying A Table, A Few Other SQL Statements.

Data Constraints - Data Constraints, The Use of Data Constraints, The Types of Data Constraints, Defining Integrity Constraints By 'Alter Table', Removing Integrity Constraints, 'Null' Value Concept, 'Not Null' Constraint, Default Value Concept, 'User Constraints' Table.

UNIT-III

Data Manipulation in SQL - Oracle Operators, Range Searching, Pattern Matching, LIKE 'IN' and 'NOT IN' Predicates, An Introduction to 'DUAL' Table, An Introduction to 'SYSDATE'.

Oracle Functions - Oracle Function, Function Types, Group Function, Scalar Function, Working With 'Date' in SQL, Grouping Of Data Of Different Tables In SQL.

Joins, Sub-Queries & Views - types of joins, use of sub-query, 'union' and clause, 'Intersect' Clause, Minus Clause, Concept of View, Types of View, Use of View.

UNIT-IV

Introduction to PL/SQL Programming - Introduction to PL/SQL, Advantages of PL/SQL, Differences between SQL and PL/SQL, PL/SQL Block Structure, PL/SQL Character set, Variable, Constant and Data type, Assignment Operator and the use of 'SELECT...INTO, PL/SQL Program Control Structure, The use of 'IF...THEN...ELSE...ENDIF', Iteration Control (The use of LOOP, WHILE, FOR), The use of 'GOTO Statement.

Cursor - Cursor an Introduction, Types of Cursor, Features of Cursor, Implicit Cursor, Explicit Cursor, Application of for Loop with Cursor.

UNIT-V

Exception Handling in PL/SQL - Exception Handling in PL/SQL, Built in Exception Handling, User Defined Exception Handling, The Raise Application-error Procedure.

Oracle Transaction - Oracle Transaction, Commit Statement, Rollback Statement, Save point statement, Concept of lock, Types of locks, Levels of Locks, 'SELECT FOR UPDATE' Statement, Removing the Lock.

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Procedures and Functions- Concept of Procedures and Functions, Advantages of Procedure and Function, Creation of Procedure and Function, Deleting Procedure and Function.

Database Triggers - Concept of Triggers, Types of Triggers, Creation of Triggers, Application of Triggers, Deleting Triggers.

OUTCOMES:-

- Learn about database models
- Gain a thorough understanding of Transact-SQL language and SQL Server Management Studio
- Learn how to write simple as well as complex queries for retrieving data from database
- Learn how to retrieve data from tables
- Master the calculation of information across result sets leveraging aggregate queries
- Learn how to update, insert and delete data
- Learn how to work with data types
- Learn about Functions and Procedure and gain understanding on different Views
- Learn how to work with Triggers and design a database
- Learn how to create and manage views
- Understand the concept of managing databases, tables as well as sequences with SQL statements
- Learn how to manage binary data leveraging BLOBs
- Learn how to ensure integrity related to multiple an related database updates

TEXT BOOK:-

- 1.Principal Of Database System. J.D Ullman Galgotia New Delhi.
2. Database System Concept By H Korth And A Silberschatz, TMH Pub
- 3.Database Management By Dr Madhulika Jain, Vineeta Pillai
- 4.The Theory Of Database Concurrency Control, C. Papadimitriou, Computer Science Press
- 5 Database Management System Pragma Publication.



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fourth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Programming with Visual Basic . NET

Subject Code: 3010422103
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- Introduction to computer programming using the Visual BASIC programming language with object-oriented programming principles.
- Emphasis is on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger.
- Make students to be able to design, code, test and debug at a beginning level.

UNIT-I

Introduction to .NET - Introduction, What is a Program?, What is Programming?, What do you mean by .NET Framework?, Features of .NET Framework, VB 6 VS VB.NET, VB.NET VS JAVA, VB.NET VS C#, What is .NET Architecture?, What is CLR?, What do you mean by Class Library?, Versions of .NET Framework, What are Assemblies?, Namespaces, CTS (Common Type System), Interfaces, What is special in VB.NET?

Visual Studio 2005 - Introduction, What is Visual Studio?, Flavors of Visual Studio, Visual Studio 2005, File Extensions Used in VB.Net, Using Visual Studio 2005, Feature of Visual Studio 2005, Output Window, Components Tray, References and the Reference Window, Quick View of Visual Studio 2005, Opening an existing project, Adding a Form to a Project.

UNIT-II

The Visual Basic Language - Visual Basic Statements, Data Types in VB.NET, Declaring Variables, Declaration of Variables (Advanced), Data Type Conversion, String Functions, Formatting Data, Arithmetic Operators, Parentheses and Precedence, Operator Operation, Constants, Control Statements, Arrays in VB.NET, Specifying Optional Procedure Arguments, Passing a Variable Number of Arguments, Recursion, Using a Delegate.

Working With The Controls - The Toolbox, Adding and deleting Tools in the Toolbox, creating a tab on the toolbox, Form Designer Basics, The Button, The ComboBox, The ListBox, The Checkbox, The PictureBox, The RadioButtons, The Scroll Bar, Timer, ListView, TreeView, Toolbar, Dialog Boxes, Menus in VB.NET, LinkLabel Control.

Designing Menus - Menus, Context menu, Event of the MenuItem, Creating menu items in Visual Studio .Net.

UNIT-III

Object Oriented Programming with VB.NET - OOPs?, What is an Object?, What are Classes?, Visual Basic .NET and Object-Oriented, Principles of Object-Oriented Programming, Classes V/s Objects, Inheritance, Polymorphism and Overloading, Scope and Accessibility in Class Modules, Namespaces, Managed Execution, Assemblies, Assemblies in VB .NET.

UNIT-IV

The .NET Framework Class Library - The .NET Framework Class Library, The System Namespace, Data Type Conversion Using Convert Class, The Array Class, The Math Class, The String Class, Other Namespaces, System.Collections, System.Data, System.IO.

OLE/COM/Win32 API - Object Linking and Embedding, History of OLE/COM, Component Object Model (COM), COM interoperability in .NET, Win32 API in .NET, COM Interoperability in .NET, Installation and Registration of Assembly, Microsoft Office solutions with Visual Studio .NET, Automation of Office from Visual Studio .NET, Creating and opening Microsoft Word document from VB.NET.

UNIT-V

A Brief Introduction to Database Access with VB .NET - Introduction, What is ADO?, What is ADO.NET?, The Connection Object, Connecting to a Database, The Command Object, The DataAdapter Object, The DataReader Object, The DataSet Object, Updating Your Database by Using

w.e.f: July 2018

DataSets, The AcceptChanges () Method, The RejectChanges () Method, The HasChanges () Method, The GetChanges () Method, Working with DataSets in Visual Studio, Moving Around in DataSet and Retrieving Data, Using Strongly Typed DataSets, DataSets With Multiple Tables, Finding and Sorting Data in DataSets, Filtering on Row State and Version, Data View Manager.

OUTCOMES:-

- Design, create, build, and debug Visual Basic applications.
- Explore Visual Basic's Integrated Development Environment (IDE).
- Implement syntax rules in Visual Basic programs.
- Explain variables and data types used in program development.
- Apply arithmetic operations for displaying numeric output.
- Write and apply decision structures for determining different operations.
- Write and apply loop structures to perform repetitive tasks.
- Write and apply procedures, sub-procedures, and functions to create manageable code.
- Create one and two dimensional arrays for sorting, calculating, and displaying of data.
- Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism.
- Write Windows applications using forms, controls, and events.

TEXT BOOK:-

- 1 Programming With VB.NET By Hemant Bairagee, Kamal Prakashan
- 2 Beginning Web Prog.Using VB.Net Bowes ,Gaig
- 3 Object Oriented Programming With Visual Basic. NET Mc Millan Michael
4. ASP Net In 3.5 Framework With C# Indore Kamal Prakashan
5. Basics Of Visual Basic Naik N K



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fifth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Bhasha Kaushal aur Sanchar Sadhan

Subject Code: 3010513801
Theory Max. Marks:70
Theory Min. Marks: 23

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Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fifth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Computer & Information Technology Basics

Subject Code: 3010512101

Theory Max. Marks:70

Theory Min. Marks:23

OBJECTIVE:

- This subject provides the basic and fundamental understanding of the working of computers.
- The subject allow student to become productive by acquiring basic understanding of MS-Office know to share data between MS-Office applications and also provides knowledge about concepts related to internet.

Unit I

INTRODUCTION TO COMPUTER ORGANIZATION –II basic components of a computer system Control Unit, ALU. Input/Output function and Characteristics, memory RAM, ROM, EPROM, PROM.

Unit II

I/O and STORAGE DEVICES Input Devices : Keyboard, Mouse, Trackball. Joystick, Digitizing tablet, Scanners, MICR, OCR, OMR, Light pen, Touch Screen. Output Devices: Monitors Characteristics and types of monitor. Types of Printer. Plotter, Sound Card and Speakers. Storage fundamental primary Vs Secondary. Various Storage Devices magnetic Tape. Cartridge Tape, Data Drives, Hard Drives, Floppy Disks, CD, VCD.

Unit III

WORD PROCESSING : Word, **Introduction to word Processing.**: MS Word: features, Creating, Saving and Operating Multi document windows, Editing Text selecting, Inserting, deleting moving text. Previewing documents, Printing document to file page. Reduce the number of pages by one. Formatting Documents: paragraph formats, aligning Text and Paragraph, Borders and shading, Headers and Footers, Multiple Columns.

Unit IV

INTRODUCTION TO EXCEL. EXCEL & WORKSHEET : Worksheet basic. Creating worksheet, entering data into worksheet, heading information, data text, dates, alphanumeric, values, saving & quitting worksheet. Opening and moving around in an existing worksheet. Toolbars and Menus, keyboard shortcuts. Working with single and multiple workbook coping, renaming, moving, adding and deleting. coping entries and moving between workbooks. Working with formulas & cell referencing.

Unit V

INTRODUCTION TO POWER POINT: Features and various versions. Creating presentation using Slide master and template in various colour scheme. Working with slides make new slide move, copy, delete, duplicate, lay outing of slide, zoom in or out of a slide. Editing and formatting text: Alignment, editing, inserting, deleting, selecting, formatting of text, find and replace text. Bullets , footer, paragraph formatting, spell checking. Printing presentation Print slides, notes, handouts and outlines.

OUTCOMES:-

After learning this course students will able to demonstrate the basic mechanics of creating Word documents, presentation and excel calculation for office use along with introductory formatting techniques and presentation styles. Also they learn the other office usage and functions of Microsoft programs.

TEXT BOOK:-

- MS office 2004 Saxena,S. New Delhi Vikas Pub.
- MS office 2006 Saxena,S. New Delhi Vikas Pub.

w.e.f: July 2018

- MS office XP for Everyone, Saxena Sanjay, New Delhi Vikas Publication
- MS office 2000 Resource Kit ,Ericson,Gary.. 1st Edition, N.Delhi prentice Hall Pub



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- FIFTH Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Data Warehousing and Mining

Subject Code: 3010512102

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- To introduce the concept of data Mining as an important tool for enterprise data management and as a cutting edge technology for building competitive advantage.
- To enable students to effectively identify sources of data and process it for data mining.
- To make students well versed in all data mining algorithms, methods of evaluation.
- To impart knowledge of tools used for data mining.
- To provide knowledge on how to gather and analyze large sets of data to gain useful business understanding.
- To impart skills that can enable students to approach business problems analytically by identifying opportunities to derive business value from data.

Unit-1

Data Warehouse – Basic concept of Data warehouse, Need for data warehouse, Common characteristics of Data warehouse, Multitier architecture of Data warehouse, Metadata, Operational versus analytical databases, Trends and planning of Data warehousing.

Unit-2

Data Modeling Strategy –Star schema and other schemas, Multi dimensional data models, Data Cube presentation of fact tables, Data warehouse design and uses, OLAP models and operations.

Unit-3

Data Warehouse Architecture Components and Implementation Options - Architectural components, Infrastructure: Operational & Physical, Extraction, Transformation and Loading, Components of an Oracle Data warehouse, Data Transformation Functions, DBA responsibilities, Capacity Planning.

Unit-4

Data Warehouse Implementation – Efficient data cube computation, Indexing OLAP data, Efficient processing of OLAP query, OLAP server architectures.

Unit-5

Data Mining - Basics of data mining, Data mining Functionalities, Data mining techniques , Classification, Clustering and Association rules, Knowledge Discovery in databases (KDD) Process, Introduction to Web Mining.

OUTCOMES:-

- Demonstrate an understanding of the importance of data mining and the principles of business intelligence
- Organize and Prepare the data needed for data mining using preprocessing techniques
- Perform exploratory analysis of the data to be used for mining.
- Implement the appropriate data mining methods like classification, clustering or Frequent Pattern mining on large data sets.
- Define and apply metrics to measure the performance of various data mining algorithms.
- Apply BI to solve practical problems : Analyze the problem domain, use the data collected in enterprise apply the appropriate data mining technique, interpret and visualize the results.

TEXT BOOK:-

1. Data Mining Data Warehousing & Olap Sharma Gajendra
- 2 Introduction to Data Mining With Case Studies Gupta G K
- 3 Data Mining Concepts & Technique, Han J Kamber

4. Data Mining Techniques. Pujari A.K.

5. Data Mining And Data Warehousing Agrawal Bharat Bhushan



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fifth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Multimedia Systems (Elective Paper - I)

Subject Code: 3010552101

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- 1..To learn and understand technical aspect of Multimedia Systems.
2. To understand the standards available for different audio,video and text applications.
3. To Design and develop various Multimedia Systems applicable in real time.
4. To learn various multimedia authoring systems.
5. To understand various networking aspects used for multimedia applications.
6. To develop multimedia application and analyze the performance of the same

UNIT -1

Introduction of Multimedia - Introduction of Multimedia, Meaning of Multimedia, What is Multimedia. Identifying Multimedia Elements, Text, Images, Sound/Audio, Animation, Video, Areas of use for Multimedia

UNIT –II

Multimedia Input Devices - Introduction, Input Device, Typing Input Devices, Pointing Input Devices, Scanning Input Devices, Audio Visual Input Devices

Multimedia Output Devices - Introduction, Output Devices, Soft Copy Vs Hard Copy Output, Monitor, Printers, Plotter.

UNIT –III

TEXT - Concept of Plain and formatted text, Advanced text formatting, Using Various Text Effect, Using text preparation tools and standard software, Conversion to and from of various text formats; Object

Images - Importance of Graphics in Multimedia, Vector and Raster Graphics, Various Attributes of Images, Various Image File Formats.

Processing Images with Common Software Tools - Overview of Photoshop, Resizing Images and Size Guide, Modify Color and effects, Layers, Text Editing, Converting an Image to Black and White, Restoring Old Photographs.

UNIT –IV

SOUND - Sound and its Attributes, Mono V/s Stereo Sound, Sound and its Effect in Multimedia, Analog V/s Digital Sound, Sound Standards on PC, Capturing and Editing Sound on PC, Overview and using some Sound Recording, Sound Editing Software, Various Sound File Formats on PC, WAV, MP3, MP4.

Animation - BASIC OF ANIMATION, Three Basic Types of Animation, Uses of animation in multimedia, Effects of Resolutions, Image Size on Quality and Storage

UNIT –v

Video - BASICS OF VIDEO, Analog and Digital Video, How to use Video on PC.; Introduction to Graphics Accelerator Cards, Introduction to DirectX, Introduction to AV/DV and IEEE1394 Cards, Brief note on Various Video Standards, Introduction to Video Capturing Media & Instruments, Introduction to Digital Video Compression Techniques, Introduction to Various Digital Video file formats

Video Editing & Movie Making Tool - Brief Introduction to Video Editing and Movie Making Tools, Movie Making Tools, QuickTime Video Editing Tool, Video for Windows.

OUTCOMES:-

- Developed understanding of technical aspect of Multimedia Systems.
- Understand various file formats for audio, video and text media.
- Develop various Multimedia Systems applicable in real time.

- Design interactive multimedia software.
- Apply various networking protocols for multimedia applications.
- To evaluate multimedia application for its optimum performance.

TEXT BOOK:-

1. MULTIMEDIA MAKING IT WORK TAY VAUGH MC GRAW HILL.
2. Graphics And Multimedia By Baluja.
3. Multimedia Systems Design Andleigh P. K. & Thakrar, K.
4. Multimedia Pandey Suyata & Pandey Manoj New Delhi, S.K. Kataria & Sons.
5. Multimedia & Application Sherawat D.S. Sharma Sanjay.



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fifth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Computer Graphics (Elective Paper – I)

Subject Code: 3010552102
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

1. To introduce the use of the components of a graphics system and become familiar with building approach of graphics system components and algorithms related with them.
2. To learn the basic principles of 3- dimensional computer graphics.
3. Provide an understanding of how to scan convert the basic geometrical primitives, how to transform the shapes to fit them as per the picture definition.
4. Provide an understanding of mapping from a world coordinates to device coordinates, clipping, and projections.
5. To be able to discuss the application of computer graphics concepts in the development of computer games, information, visualization, and business applications.
6. To comprehend and analyze the fundamentals of animation, virtual reality, underlying technologies, principles, and applications.

UNIT 1

Computer Graphics- Introduction to computer graphics, Manual Drafting vs computer graphics, Advantage of computer graphics, Classification of computer graphics, components of computer graphics, Application of computer graphics.

Graphical input devices – mouse, keyboard, trackball, touchpad, joystick, touch screen, light pen, image scanner, data glove.

Graphical output devices – Cathode Ray Tube, Liquid crystal display, Light emitting diode, Impact printer, non-impact printer, plotter.

UNIT 2

SRG -Introduction to SRG, Advantage and Limitation of SRG, Line generation, DDA algorithm for Line generation, Bresenham's algorithm for Line generation, Circle generation, Bresenham's Algorithm for circle generation.

Clipping- clipping line, clipping line algorithm, polygon, types of polygon, polygon clipping algorithm, clipping circle, clipping circle algorithm.

UNIT 3

Geometric Transformation, 2D transformation and 3D transformation – translation of object, scaling of object, rotation of object, shearing of object, reflection of object. Combined transformation or composite transformation, homogeneous coordinate.

Illumination model – Introduction to Illumination model, categories of illumination model,

Animation – Introduction to Animation, types of Animation, principles of animation.

UNIT 4

Polygon surface- Introduction to Polygon surface, vertex table, edge table, surface table, Introduction to subdivision algorithm, polygon visibility cases in subdivision technique, subdivision algorithm. Z-buffer algorithm.

Quadric Surface – Sphere, Ellipsoid, Tores. Super quadric surface – super ellipse, super ellipsoid

Bloppy objects – molecular structure, water droplets, melting objects, muscle shape

UNIT 5

w.e.f: July 2018

Curve--Spline representation, types of spline representation, parametric continuity condition, types of parametric continuity condition, cubic spline interpolation method, Bezier curve, midpoint Bezier Technique algorithm, B–spline curve, operations of B-spline curve, Beta spline. Sweep representation, constructive solid-geometry method, octrees representation.

OUTCOMES:-

- To list the basic concepts used in computer graphics.
- To implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping.
- To describe the importance of viewing and projections.
- To implement various line generation, clipping, curve generation algorithms.

TEXT BOOK:-

1. Computer Graphics New Delhi Tata Mc Graw Hill Pub.
- 2 Computer Graphics (Hindi) Dandin Sridhar B.
- 3 Computer Graphics & Multimedia G S Baluja Dhanpat Rai Pub
- 4.Computer Graphics ,Baker
5. Principles Of Interactive Comp. Graphics Newman;W.M



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fifth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Data Structure with C++ (Elective Paper – II)

Subject Code: 3010552103

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- To impart the basic concepts of data structures and algorithms.
- To understand concepts about searching and sorting techniques.
- To Understand basic concepts about stacks, queues, lists, trees and graphs.
- To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures

UNIT-I

Analysis of Algorithm-Introduction, Criteria of Algorithm, Time Complexity, Space Complexity, Asymptotic Notation: Big Oh (O) Notation, Big Omega (Ω) Notation, Big Theta (Θ) Notation.

Types of Data Structures- Introduction, Types of Data structures, Linear Data Structures, Non Linear Data Structure, Array, Sparse Matrices, Garbage Collection, Benefits, Disadvantages.

UNIT-II

Stacks-Introduction, Push operation, Pop operation, Stack implementation using arrays, (static implementation of stacks), STACK as a Linked List, Stack as an abstract data structure, Applications of stack, Conversion of Expressions, Precedence and associativity of the operators, Evaluation of Postfix expression, Multiple stacks.

Recursion-Introduction, Working of Recursion, Fibonacci series, Tower of Hanoi, Efficiency of recursion.

UNIT-III

Queue-Introduction, Different types of queues, Queue (Linear queue), Queue as an abstract data structure, Circular queue, Double ended queue (Deque), Priority queue, QUEUE as a Linked List, Applications of Queue.

Linked Lists-Concept of list and array , Introduction to Data Structures, Arrays, Linked list, Singly or Linear linked list, Circular singly linked list, Doubly linked lists, Header Node, Applications of linked lists.

UNIT-IV

Trees-Introduction, Representation of tree, Binary Tree , Representation of binary tree, Array representation of binary tree, Linked List representation of binary tree, Basic Operation on Binary Tree- Traversals, Binary Tree Traversal Algorithms (Recursive), Creation of Binary Search Tree:, Types of binary trees, Operations on Binary Search Tree (BST), Threaded binary trees, Application of Binary Tree:, B-Tree, Height Balanced Tree.

Graph- Introduction to Graphs, Undirected Graph, Directed Graph or digraph, Graph Representation, Adjacency Matrix Representation, Adjacency List Representation, Graph Traversals, Breadth First Traversal, Depth First Traversal , Searching in Graph, Minimal Spanning Tree.

UNIT-V

Sorting and Searching - Introduction, Bubble sort, Selection Sort, Merge Sort, Quick sort, Insertion Sort, Shell sort, Comparison of sorting methods, Hash Table, Collision Resolution Techniques, Linear Search (Sequential Search), Binary Search, Searching an ordered table.

OUTCOMES:-

- An ability to analyze algorithms and algorithm correctness.
- An ability to summarize searching and sorting techniques
- An ability to describe stack, queue and linked list operation.
- An ability to have knowledge of tree and graphs concepts.

TEXT BOOK:-

1. Data Structure with C++ Hubbard,John.R N.Delhi, Tata McGraw Hill
- 2 Alorithms E Data Structure Wirth,Niklaus
- 3 Data Structure,Seymor Lipschutz Mc Graw Hill
4. introduction to Data Structure Shridhar ,Pragya Publication.
5. Data Structure with C++ , CVRU publication.



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Fifth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Accounting with Tally (Elective Paper – II)

Subject Code: 3010552104
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVES:

The objectives of the subject is to give exposure to the students, about fundamental accounting principles, techniques and their application in the business decision making process.

UNIT-I

Accounting- Meaning Of Accounting, Objectives Of Accounting, Important Terms, Accounting Equation, Rules Of Debit And Credit- Journal & Ledger, Journal, Ledger, Cash Book, Subsidiary Books, Financial Statement, Trading & P&L A/C, Balance-sheet, Inventory, Adjustment Entries, Bill Of Exchange.

Installing Tally 9- Introduction, Tally 9.0 (Release 1.0), Major Enhancements In Tally 9, Minor Enhancements In Tally 9, Multilingual Business Accounting And Inventory Management Features, Performance And Implementation Features, Accounting And Inventory Control Features, Installing Tally 9.0, Application Directory, Data Directory, Configuration Directory, Language Directory, Activating Tally, Activating Tally Gold For Multi User, Registering Tally, Validating Tally, Tally Data Migration Tool, Uninstalling Tally 9.

UNIT-II

ABC of Company- Creation of New Company Selection Of New Company Deletion Of Company Alteration Of Company Shut A Company.

Company Features- Features Of Company Accounting Features Inventory Features, , Statutory Features

Tally Screen Components- Title Bar, Button Bar, Calculator, Working Area, Quitting, Gateway Of Tally, Current Status Area.

Configuration- General, Numeric Symbols, Accts/Inventory Info, Printing, Connectivity, Licensing, Shop, Quit

Budget- Introduction, Budget, Creating Budget, Alter A Budget, Delete Budget, Display Budget/ Budget Variance, Scenarios.

UNIT-III

Job Costing- Introduction, Enabling Or Configure Job Costing In Tally, Master Creation For Job Costing, Voucher Type And Voucher Class, Job Cost Reports.

Reports- Introduction Accounting Reports, Trial Balance, Balance Sheet, Profit & Loss, Cash Flow Statement, Fund Flow Statement, Ratio Analysis, Day Book, Cash/Bank Book Sales Register Purchase Register Outstanding Interest Cost Centers Job Work Analysis Statistics Inventory Reports.

Accounts Groups & Ledgers- Introduction Accounts Group Multiple Group Creation Display Group Alter Group Multiple Ledgers Display Ledger Alter Ledger Voucher Types.

Payroll Accounting- Introduction, To Activate Payroll In Tally 9, Payroll Menu, Display Pay Heads, Multiple Group Creation, Employee Creation, Salary Detail, Attendance, Attendance Type, Voucher Creation.

Export & Import- Introduction, Export, Import, ODBC Compliances.

UNIT-IV

w.e.f: July 2018

Cost Centre- Introduction Cost Centre, Creating Cost Centre, Display Cost Centre, Alter Cost Centre Cost Category, Create Cost Categories, , Display Cost Categories, Alter Cost Categories Voucher Entry Cost Centre Class, Creating Cost Centre, Invoice Entry Using Cost Centre Reports Related To Cost Centre.

Foreign Currencies- Introduction Foreign Currency, Create Foreign Currency, Alter Foreign Currency, Display Foreign Currency, Exchange Rate Entry Voucher Entry Using Foreign Currency Voucher Entry Through Forex Journal Voucher Class Reports Related To Foreign Currency.

Interest- Introduction, Interest, Simple Mode, Interest On Outstanding Balances, Reports On Interest Calculated On Outstanding Balances, Advanced Parameter Mode, Interest Calculation Transaction By Transaction/Voucher Interest At Fix Rate, Voucher Interest At Variable Rate, Statement Of Interest Due On Invoice, Interest Reports, Interest Voucher Class.

UNIT-V

Printing- Introduction, Printing of Cheque, Multi Account Printing Options, Purchase Printing, Sales Transaction, Receipt Voucher, Journal/Contra, Debit/Credit Note, Reminder Letter, Confirmation Statement Reports Printing Button Related.

Bank Reconciliation-Introduction, Bank Reconciliation in Tally 9, Configuration of Bank Reconciliation.

Security Control- Introduction Security Levels Access Type.

Backup & Restore- Introduction, Group Company, Create a Group Company, Alter a Group Company, Tally Audit, Splitting Company Data.

Inventory- Introduction Stock Group Stock Item Stock Categories Godowns, Units Of Measures Rate Of Duty Inventory Vouchers Reorder Level Inventory Reports Inventory Info Inventory Books Statement Of Inventory Batch Wise Details Price List.

OUTCOMES:

- After learning this subject student will understand the fundamental principles and techniques of financial accounting so as to use these concepts for effective business decisions.
- Student learns about accounting software tally and their features.

TEXT BOOKS

- Shukla, S.M. Financial Accounting. Sahitya Bhawan Publication.
- Agrawal, M.L and Gupta, K.L. Cost Accounting. Sahitya Bhawan Publication.
- Gupta, K.L. Management Accounting. Sahitya Bhawan Publication.



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Sixth Semester
BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)
SUBJECT: Software Testing & Project Management

Subject Code: 3010612101
Theory Max. Marks: 70
Theory Min. Marks: 23

OBJECTIVE:-

- 1 Basic software debugging methods.
2. White box testing methods and techniques.
3. Black Box testing methods and techniques.
4. Designing test plans.
- 5 Different testing tools (familiar with open source tools)
- 6 Quality Assurance models.

UNIT 1

Testing basics and Development Models: Principals and context of testing in software production, Usability and Accessibility Testing, Phases of Software Project, Process models to represents different phases, Software Quality Control and its relation with testing, validating and verification, Software Development life cycle models, various development models.

White Box Testing: White Box Testing - Static Testing, Structural Testing-Unit code functional testing, Code coverage testing, code complexity testing,.

Black Box Testing: What? Why and when to do Black box testing, Requirements based testing, Positive and Negative Testing, Boundary value testing, Decision Tables, Equivalence Partitioning, State Based or Graph Based Testing, Compatibility Testing, User Documentation Testing, Domain Testing.

UNIT 2

Integration Testing: Introduction and types of integration testing, Scenario testing, defect bash.

System and Acceptance Testing- Overview, functional and non-functional testing, Acceptance testing.

Overview of some software testing tools: WinRunner, LoadRunner, Test Director.(Some practical should be conducted using these tools)

UNIT 3

Performance Testing- Introduction, factors related to performance testing, methodology for performing testing, Regression Testing,

Ad hoc Testing- Overview, Buddy & pair testing, Exploratory testing, Interactive testing, Agile and extreme testing.

Testing of Object Oriented Testing – Introduction, Differences in OO testing.

UNIT 4

Software Project Management: Overview, Software Project Management Framework, Software Development life cycle,

Organization Issues and Project Management, Managing Processes, Project Execution, Problems in Software Projects, Project Management Myths and its clarifications.

Software Project Scope: Need to scope a software project, scope management process, communication techniques and tools, communication methodology

Software Requirement Gathering and Resource allocation: Requirement specifications, SRS Document preparation, Resources types for a software projects, requirement for resources allocation.

UNIT 5

Software Project Estimation: Work Breakdown structure (WBS), steps in WBS, Measuring efforts for a project, techniques for estimation – SLOC, FP, COCOMO and Delphi methods.

Project Scheduling: Scheduling and its need, scheduling basics, Gantt Chart, Network scheduling techniques, Pert and CPM

Using a Project Management Tool: Introduction to MS Project 2000, Managing tasks in MS Project 2000, Tracing a project plan, creating and displaying project information reports.

OUTCOMES:-

- Investigate the reason for bugs and analyze the principles in software testing to prevent and remove bugs.
- Implement various test processes for quality improvement
- Design test planning.
- Manage the test process
- Apply the software testing techniques in commercial environment
- Use practical knowledge of a variety of ways to test software and an understanding of some of the tradeoffs between testing techniques.

TEXT BOOK:-

1. Software Testing : Principles and Practices Desikan Srinivasan Chennai Pearson Pub.
- 2 Effective Methods For Software Testing E.W.Perry
- 3 Testing principle technique and tool s limage TMH
- 4 software testing CVRU publication



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Sixth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Information Technology Trends (Elective Paper – III)

Subject Code: 3010642101

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- To develop skills in understanding strategic issues related to E- Commerce and E- Governance .
- To develop a broad knowledge of E- Governance and E- Commerce activities in India.
- To understand the Electronic Payment Systems.
- To introduce the concept of data Mining as an important tool for enterprise data management and as a cutting edge technology for building competitive advantage.
- To enable students to effectively identify sources of data and process it for data mining.
- To make students well versed in all data mining algorithms, methods of evaluation.
- To impart knowledge of tools used for data mining.

UNIT 1

Introduction-Introduction, Parallel and Distributed Systems, Computer Networks **Distributed Systems**-Distributed System, Managing Distributed Databases, Distributing the Processing and Storage Function, Transactions and Concurrency, Advantages and Disadvantages of DS , Flavors of Distributed Systems, Architectures of Distributed Systems, Security in Distributed Systems

UNIT 2

Modern Business Trends : E-Business & E-Commerce -INTRODUCTION, ONLINE SHOPPING, E-BUSINESS, E-Commerce, Buying and Paying Online, Electronic Payment System, Online Publishing

Modern Business Management: E-SCM - Introduction, Supply Chain Management, E-Supply Chain Management, Components of Modern E-SCM, Major Trends in E-SCM, Example of E-SCM, Architecture of E-Supply Chain Models, **Modern Business Management: E-CRM** - Customer Relationship Management Concepts, E-CRM Solutions, Advantages of E-CRM, E-CRM Capabilities, , Example of E-CRM, E-CRM Framework,

Virtual Reality - Introduction, History of Virtual Reality, Virtual Reality, Virtual Reality Application, Virtual Reality : Hardware, Levels of VR Hardware Systems , VR Software Systems , Aspects of VR Program

UNIT 3

Artificial Intelligence - Introduction, Concept of AI, AI Applications, Intelligence, Artificial Intelligence, Intelligent Systems, Knowledge-based Systems ,

Expert Systems , Introduction, Background History, Concept of Expert Systems, Expert Systems Vs. Problem solving System, People involved in Expert Systems, Features of Expert System, Advantages and Disadvantages of ES, ES Applications, Expert System Problem domain, Benefits and Limitations of Expert Systems, Examples of Expert Systems

Data Warehousing , Introduction, Data Warehouse, Data Warehousing, Data Warehouse Components, Structure of Data warehouse, Advantage of Data Warehouse, Uses of a Data warehouse, Standard Reports and Query,

Data Mining , Introduction, Data Mining & Evolution of DM, Data mining: Verification vs. Discovery, Data Mining Technology, Advantages of Data Mining, Disadvantages of Data Mining , Data Mining Processes, Data Mining Techniques, Data Mining tools, On Line Analytical Processing, OLAP Types, Selecting an OLAP Application

UNIT 4

Mobile Commerce , Mobile Commerce , Technology for Mobile Commerce, Wireless Communications and its Generations, Wireless Application Protocol (Wap), Other Wireless Technologies , GSM/CDMA,

w.e.f: July 2018

Geographic Information Systems , Introduction, Geographic Information System , Components of a GIS, Working of GIS, Data for GIS, GIS and Related Technologies, Traditional maps Vs. GIS, Functions of GIS , GIS Software

UNIT 5

Introduction and Basic Concepts of Modern Communication and Telephony Technology , Introduction, Code Division Multiple Access, Wireless Local Loop, GSM (Global System for Mobile Communication), Voice Over IP, Bluetooth , Wi-Fi, ISDN

Electronic Data Interchange , Introduction, Electronic Data Interchange, The Structure of EDI Systems, EDI Standards, Features of EDI, EDI Technology, Advantages of EDI, Barriers in adopting EDI, Drawbacks of EDI, New Trends in EDI.

OUTCOMES:-

- The student will develop appreciation for the risks and challenges associated with implementing E- Government and knowledge of how to overcome them.
- The student will develop knowledge of how the government may contribute in moving the country towards E- Commerce.
- Organize and Prepare the data needed for data mining using preprocessing techniques
- Perform exploratory analysis of the data to be used for mining.
- Implement the appropriate data mining methods like classification, clustering or Frequent Pattern mining on large data sets.

TEXT BOOK:-

- Amir Manzoor “ E-Commerce :An Introduction “ Lambert
- Data Mining Data Warehousing & Olap Sharma Gajendra
- Introduction to Data Mining With Case Studies Gupta G K
- Data Mining Concepts & Technique, Han J Kamber



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SEMESTER- Sixth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: E-Commerce (Elective Paper – III)

Subject Code: 3010642102

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- To develop skills in understanding strategic issues related to E- Commerce and E- Governance .
- To develop a broad knowledge of E- Governance and E- Commerce activities in India.
- To understand the Electronic Payment Systems.
- To develop knowledge and confidence in undertaking E- Government initiatives in respective of government office.
- To develop appreciation for the risk and challenges associated with implementing E- Government and knowledge of how to overcome them.
- To develop knowledge of how the government may contribute in moving the country towards E- Commerce.
- To understand E- Government systems security issues and achieve them

Unit 1

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; 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.

Unit 2

E-Commerce Activities: Various Activities of E-Commerce; Various Modes of Operation Associated with E-Commerce; Matrix of E-Commerce Types; Elements and Resources Impacting E-Commerce and Changes; Types of E-Commerce Providers and Vendors; Man Power Associated with E-Commerce Activities; Opportunity Development for E-Commerce Stages; Development of E-Commerce Business Case; Components and Factors for the Development of the Business Case; Steps to Design and Develop an E-Commerce Website.

Unit 3

Internet – The Backbone for E-Commerce: Early Ages of Internet; Networking Categories; Characteristics of Internet; Components of Internet – Internet Services, Elements of Internet, Uniform Resource Locators, Internet Protocol; Shopping Cart, Cookies and E-Commerce; Web Site Communication; Strategic Capabilities of Internet.

Unit 4

E-Payment Systems: Electronic Funds Transfer; Digital Token Based E-Payment Systems; Modern Payment Systems; Steps for Electronic Payment; Payment Security; Net Banking, E-Marketing, E-Security.

Unit 5

w.e.f: July 2018

E-Commerce & Online Publishing: This unit explains the concept of online publishing, strategies and approaches of online publishing, and online advertising. Implementation of E-Commerce: WWW.EBAY.COM - B2C Website – Registration, Time factor, Bidding process, Growth of eBay; PayPal – New Trend in Making Payments Online; National Electronic Funds Transfer

OUTCOMES:-

- The student will Understand strategic issues related to E- Commerce and E- Governance.
- The student will Understand and develop a broad knowledge of E- Governance and E-Commerce activities in India.
- The student will Understand the Electronic Payment Systems.
- The student will develop knowledge and confidence in undertaking E- Government initiatives in respective of government offices.
- The student will develop appreciation for the risks and challenges associated with implementing E- Government and knowledge of how to overcome them.
- The student will develop knowledge of how the government may contribute in moving the country towards E- Commerce.
- The student will Understand the E- Government systems security issues and achieve them.

TEXT BOOK:-

- Amir Manzoor “ E-Commerce :An Introduction “ Lambert
- Gary P. Schnelder, “E-commerce”, Cengage Learning India.
- C.S.R. Prabhu, “E-governance: concept and case study”, PHI Learning Private Limited.



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SEMESTER- Sixth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Web Development through PHP & MySql (Elective Paper – IV)

Subject Code: 3010652103

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- Gain the PHP programming skills needed to successfully build interactive, data-driven sites
- Use the MVC pattern to organize code
- Test and debug a PHP application
- Work with form data
- Use cookies and sessions
- Work with regular expressions, handle exceptions, and validate data

Unit-1

Introduction to PHP & Creating your first PHP script., Introduction, Considering the Various Uses for PHP, Using PHP for web application, Using PHP for database applications, Using PHP with your file system, Using PHP for system commands, Understanding How PHP works, PHP as a general purpose language, PHP for the web, Keeping Up with changes in PHP, PHP 5, Previous versions of PHP., Introduction, Writing PHP statements, Adding PHP sections to HTML files, Writing PHP output statements, Documenting your scripts.

Unit-2

Using variables in PHP scripts & Working with data., Understanding data types, performing arithmetic, Manipulating characters strings, Using dates and times. , Introduction Naming variables, Assigning values to variables, Removing variables, Using constants, Handling errors.,
Storing data in groups by using arrays, Introduction, Building arrays, Assigning values to arrays, Sorting arrays, Using Values in arrays, Building multidimensional arrays.

Unit-3

Controlling the flow of the script & Reusing PHP code, Introduction, Changing the order in which statements are executed, Setting up condition, Joining simple conditions to make complex conditions, Using conditions in conditional statements and loops, Writing if statements, Building and using loops for repeated statements, Breaking our of loops., Introduction, Including files in scripts, Understanding store for included files, Writing functions, Using functions.

Unit-4

Object-Oriented Programming meets PHP, Introduction, Understanding object- oriented programming, Identifying objects, Writing Classes, Using Classes.,
The Basics of web application & Other web application Introduction, Understanding web site security, Displaying static pages, Collecting information form user with HTML forms, processing information received from users., Introduction, Passing information from page to page, using cookies, using hidden fields in HTML forms, Using HPP session functions, Adding java script to PHP scripts.

Unit-5

Storing data with PHP, Introduction, Writing, and reading flat files, Exchanging data between PHP and other programs, Understanding database supports in PHP, Using PHP to interact with a database, Handling database-connection errors.

OUTCOMES:-

- Create PHP scripts that:
- Use object-oriented PHP,
- Implement business logic within the database,
- Use stored procedures and triggers,
- Create and deploy a portable web-based system.
- Test and debug object-oriented PHP scripts.

TEXT BOOK:-

1. Using Linux Apache MySQL PHP PERL on Linux , Bayross,Ivan
2. PHP -Abeginners Guide Appu,Ashok
3. HTML Java Script DHIML & PHP Bayross, Ivan



Dr. C.V. RAMAN UNIVERSITY

Kargi Road, Kota, Bilaspur (C.G.)

SEMESTER- Sixth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: Programming with ASP.Net & C#.Net (Elective Paper – IV)

Subject Code: 3010652103

Theory Max. Marks: 70

Theory Min. Marks: 23

OBJECTIVE:-

- Provide a strong programming head to one of the popular technologies dot net.
- Understand from structure and basics of .NET framework.
- Process of Rapid Application Development environment in C#.NET as well as ASP.NET.
- Includes the backend database applications in applications.
- Developing complete applications in .NET technology.

Unit-1

Web programming concepts : Introduction to web programming , Client / server technology, Understanding web server IIS , Net platform Explore.netframework4.5 , Understand common language runtime , Understand the role of CTS and CLS, Learn about base class libraries, Explain the difference between managed code and unmanaged code, Start exploring IDE-visual studio 2012.Asp.net framework : .Net framework, The common language runtime, Frame class library, Garbage collection, MSIL, Types of websites, Intrinsic objects in asp.net

Unit-2

Console application : C# language syntax, Working with console class(input and output), Learn how to create c# datatype and variable, Learn about data type conversions, Working with operators, Creating conditional and looping constructs, Implementing methods and parameters, Explain the difference between value types and reference types, Learn how to implement string handling

Unit-3

Classes & Objects : Classes and objects, Methods, properties and events, Constructors, Property procedures, Enumerations, Reference vs. value types, Structures, Namespaces, Dynamic and dynamic language runtime, Abstract classes and interfaces, The exception handling in .net 4.5,Arrays& collections Arrays, Resizing arrays, Arraylists, Hashtables , Generic collections, Working with windows form

Unit-4

ADO.NET : (working with database) Overview of ADO.NET, Connection object, Command object, Data readers,Datasets & Dataadapters Using SQLdatasource, Winforms with database connectivity.

Unit-5

Webforms : Web control class, Creating webforms application, Handling images, Navigating between pages, Managing server controls, Validation controls: Asp.net validation controls, Configuring validation controls,Data controls ,Two tier architecture, Three tier architecture

OUTCOMES:-

- Will have knowledge and strong programming hand to the dot net.
- Rapid Application Development using ASP.NET.
- Develop frontend and backend database applications.
- Develop complete application in .NET technology.

TEXT BOOK:-

- Asp.Net Unleashed

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SEMESTER- Sixth Semester

BRANCH: BACHELOR OF COMPUTER APPLICATION(B.C.A.)

SUBJECT: PROJECT Work

Subject Code: 3010632101

Theory Max. Marks: 200

Theory Min. Marks: 100

All the candidates of BCA are required to submit a project-report based on the work done by him/her during the project period. A detailed Viva shall be conducted by an external examiner based on the project report. Students are advised to see the detailed project related guidelines on the website of CVRU. (www.cvru.ac.in) under Project Guidelines for student section