Course: BCA **Semester:** 1

Prerequisite: Basics knowledge of Trigonometry and Geometry

Rationale : To acquire fundamental knowledge and apply in Bachelor of Computer Application discipline

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	0	-	3	20	20	-	60	-	100

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Trigonometry** Measurement of Angles (Degree to Radian and Radian to Degree), Standard and Allied Angles, Multiple and Sub multiple Angles	15	7
2	**Functions** Definition of function, Types of function , Composite function and Inverse function	10	4
3	**Limits** Definition of limit, meaning of ‘x tends to 0’ , ‘x tends on infinity’, Right and Left hand limit , working rules of limit , Standard formula of limit and Example	20	10
4	**Differentiation** Definition, Rules of Sum, Product, Quotient of functions, Chain rule, Derivative of Implicit function and Parametric functions, Logarithmic differentiation, Successive differentiation up to second order. Maxima and Minima	20	10
5	**Integration** Concept , Integral od standard functions , Working rules of Integration , Integration by parts , Integration by substitution method , Definite integral	20	10
6	**Co–ordinate Geometry** Point : Distance formula in R2, Mid-point , Section formula Line : Forms of equation of straight line, slope point form, Two point form, Parallel and perpendicular lines	15	7
	Total	100	48

Reference Books

1.	**Applied Mathematics (TextBook)** By H.K.Das | S.Chand Publication
2.	**Elementary Calculus** By P.R. Masani, R. C. Patel, D. J. Patil
3.	**Differential Calculus** By Shantinarayan | S.Chand Publication

Course Outcome

After Learning the Course the students shall be able to:

1. Make Students find height of something and distance between two things easily using trigonometric functions.
2. Understand to check whether some function if convergent or divergent on the basis of its limits
3. With the help of derivative student able to find maximum and minimum value of some function
4. Integration helps to find area
5. Concept of Geometry helps to find distance between point and line, point to point

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Subject Syllabus

05101131 - Financial Accounting

Course: BCA

Semester: 1

Prerequisite: Basics knowledge of commercial business terms

Rationale : To acquire fundamental knowledge of accounting and its application.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
					Internal Marks			External Marks		
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/	Credit	T	CE	P	T	P	
3	0	0	-	3	20	20	-	60	-	100

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Basic Accounting**• Introduction, Definition, Advantages and Limitations • Importance and scope, concepts and conventions, generally accepted accounting principles • Branches of Accounting - Financial Accounting, Cost Accounting and Management Accounting	17	8
2	**Basic Concepts**• Double entry framework, Types of Account, Rules of Debit-Credit and • Basic Accounting Terms,Basic concepts of Journals, ledgers, purchase book, sales book, cashbook.	27	13
3	**Preparation of financial statements**• Journal • Ledger • Trial Balance • Trading Account • Profit and loss account • Balance sheet	35	17
4	**Application of computers in accounting**• Tally Accounting Software - Features	21	10
	Total	100	48

Reference Books

1.	**Accounting for management (TextBook)** By Bhattacharya & Deaden | Tata McGraw Hill | 5th
2.	**Elements of Book Keeping & Accountancy** By B.S. Shah & Sons | B.S. Shah & Sons
3.	**Accounting With Tally** By Nadhani | K. K -BPB Publications
4.	**Financial Accounting** By R.L Gupta & V.K Gupta
5.	**Fundamental Accountancy** By S.N. Maheshwari

Course Outcome

After Learning the Course the students shall be able to:

1. To acquire fundamental knowledge of accounting and its application
2. Able to manage the stock cash, Assets, Liabilities
3. Able to solve financial problems
4. Able to manage profit and loss

Parul® University

Subject Syllabus

05191101 - Basic Mathematics

Course: BCA **Semester:** 1

Prerequisite: Knowledge about basic arithmetic operations and geometry

Rationale : The course provides basic knowledge of mathematics which will be useful in computer application.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
4	0	0	-	4	20	20	-	60	-	100

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Set theory** Introduction, Representation of sets, Types of Sets, Venn Diagrams, Operations on Sets, Cartesian Product of two Sets	12	6
2	**Determinants and Matrices** Determinants, Expansion of a determinant, Properties of determinants, Minors and Cofactors, Cramer's Rule Matrices, Types of matrices, Arithmetic operations on Matrices , Cramer's rule , Determinants of a Square Matrix, Adjoint of Matrix, Inverse of matrix (up to 3x3 matrix using adjoint matrix)	26	12
3	**Arithmetic and Geometric Progression** Concept of a sequence , Concept of Series, The sum of an arithmetic series, General term of an A.P, Sum upto 'n' terms of an A.P, General term of a G.P, Sum upto 'n' terms of a G.P, Sum upto infinite terms of a G.P.	12	6
4	**Permutations and Combinations** Introduction of Factorial, Fundamental Principle of Counting, Permutation vs. Combination, Types of Permutations, Circular Permutations, Combinations, Different formulas on combination & its Applications.	17	8
5	**Trigonometry** Measurement of Angles (Degree to Radian and Radian to Degree), The trigonometric functions, Graphs of circular functions, Trigonometric identities , Applications of trigonometry.	17	8
6	**Co–ordinate Geometry** Point : Distance formula, Mid-point formula, Section formula. Line : Forms of equation of straight line, slope point form, Two point form, Parallel and perpendicular lines.	16	8
	Total	100	48

Reference Books

1.	**B.C.A. Mathematics VOL II** By J.P. Chauhan | Krishna Prakashan Media (P) Ltd.,Meerut
2.	**SystematicModern Mathematics- Part-I & Part-II** By L.R. Dhanda, G.K. Saini and Suranjan Saha | Kalyani Publishers.

Course Outcome

After Learning the Course the students shall be able to:

1. Ability to know and to understand various types of sequences and series.
2. Study about set theory.
3. Solve Problems related to Determinant and Matrices.
4. Understand concept of geometry.

Course: BCA **Semester:** 1

Prerequisite: Knowledge of english language studied till 12th Std

Rationale : Basic Communication skills are essential for all graudates

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
2	2	0	-	4	-	100	-	-	-	100

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	Determiners and Articles	5	2
2	Industry Expectation	5	3
3	Nouns and Pronouns	5	2
4	Motivation	5	3
5	Prepositions	5	2
6	Ice Breaker + Introducing your friend	10	3
7	Pronoun-Antecedent Agreement	5	2
8	Debate	10	3
9	Subject-Verb Agreement	5	2
10	Extempore	10	3
11	Verbs	5	2
12	Tourism Pitch	5	3
13	Lifeboat	5	3
14	Listening skills	5	3
15	Story Mason	10	3
16	Play Teacher	5	3
17	Reporter	5	3
	Total	105	45

Reference Books

1.	**Word Power Made Easy** By Norman Lewis | Goyal Publishers
2.	**Understanding and Using English Grammar** By Betty Azar & Stacy Hagen | Pearson Education

Course Outcome

After Learning the Course the students shall be able to:
1. Comprehend day to day English 2. Respond to familiar issues / topics in English 3. Speak confidently on stage

Course: IMCA (A.Y.-4) **Semester:** 1

Prerequisite: Basic knowledge of Computer and IT

Rationale : The objective of this course is to familiarize students with concepts of fundamentals of information technology and detailed working of computer and its application

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	-	2	-	4	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Introduction of Computer**Overview of Computer, Different Characteristics computers, Architecture of Computer, Computer Input/ Output Peripheral devices, Different types of Generation in computers, Types of computers, Application of computers	10	5
2	**Input Output Peripheral devices**Computer languages: Overview, Evolution of programming languages, Types of programming languages, Characteristics of programming language Input devices: Overview, Different Types of input devices, character recognition of Optical device, Recognition of Optical Mark, recognition of Magnetic ink character, Bar code reader, Output devices: Overview, Types of output devices, Computer software: Introduction, software definition, software and hardware relationship, different categories of software	15	7
3	**Number Conversion in Computer**Overview of Decimal, Binary, Octal and Hexadecimal numbers, Octal number system, Decimal number system, Hexadecimal number system , Number Conversions, Addition, Subtraction, Multiplication and Division in Number System, Complement of Binary Number System, Subtraction using Compliment, Binary number system, , Binary Coded Decimal (BCD), Addition of BCD Numbers, Non-Weighted Number System, Gray code Conversions - Gray and Binary Codes , Fixed point and Floating point	20	10
4	**Fundamentals of Gates**Overview (design) of gates, derivative gates, and universal gates. Combination and sequential logic circuits, half adders, full adders, half subtractors, and full subtractors. Flip-flops, SR, D, JK, JK master-slave, T flip-flops, encoders, decoders, multiplexers, demultiplexers.	20	10
5	**Memory Management**Primary memory: memory representation, memory hierarchy, random access memory, RAM type, read-only memory, ROM type. Secondary storage: Introduction, Classification, Magnetic tape, Magnetic disk, Optical disk, Magneto-optical disk, Memory stick, Universal serial bus, large capacity storage device.	15	7
6	**Basics of Internet**Evolution, basic internet terminology, internet connectivity, internet applications, network types, topologies	5	3
7	**Understanding Word Processing and Spread Sheet**Introduction, Objectives, Editing Text, Formatting the Text, Table Manipulation, Manipulation of Cells, Formulas and Function in excel.	15	6
	Total	100	48

Reference Books

1.	**Digital Logic and Computer Design (TextBook)** By Morris Mano | PHI
2.	**Introduction to Information Technology** By ITL Education Solution Limited | PearsonEducation | 2012
3.	**MS OFFICE 2007** By Vikas Gupta | Wiley
4.	**Computer Fundamentals** By Anita Goel | Pearson Education | 2011
5.	**Digital Fundamentals** By Thomas L Floyd | Pearson

Course Outcome

After Learning the Course the students shall be able to:

1.Explain the basic structure and functionality of computers and their role in different applications.
2.Identify and differentiate between various input and output devices, explaining their functions and applications.
3.Solve basic number conversion problems and analyze simple digital circuits using fundamental logic gates.
4.Evaluate memory management techniques and utilize basic internet functions, word processing, and spreadsheet tools in practical scenarios.

List of Practical

1.	**1. Case study on salary calculation** Calculate Allowance based on given Condition. 1. HRA is 10% on Basic Salary if Salary more than 20000. 2. DA is on 25% on Basic Salary. 3. Medical Allowance (MA) = Executives get MA Rs 1000, Officers get MA Rs 700 & Assistants get MA Rs 500 4. Calculate Gross Salary. Gross Salary = Total of Basic + HRA + DA + MA 5. Calculate Professional Tax Upto 5000 = 0, upto 1000 = 60, upto 15000 = 100 & over 15000 = 150 6. Calculate Annual Salary 7. Calculate Income Tax Up to 100000 = 0, then 50000 = 10%, then 100000 = 20%, over 250000 = 30% Hint: Formula =IF (K2<=100000,0,IF(K2<=150000,(J2-100000)*10%,IF(K2<=250000,(K2 150000)*20%+5000,(K2- 250000)*30%+25000))) 8. Calculate Net Salary Payable Annual salary - income tax
2.	**Formatting alignment and creating table** 1. Type in the Title Microsoft Word Computer Training Manual 2. Text formatting: Times New Roman font, size 14, Bold and Blue. Paragraph formatting: Align Center. 3. Type in the first paragraph. Text formatting: Arial font, size 11. Paragraph formatting: Align Justify, First Line Indent at ´ Type the notes.
3.	**Word art and clip art** Prepare visiting card for caterrer service in word 2007 Prepare interactive word document.(apply all formatting style)
4.	**Macro** creating macro
5.	**Invitation letter format** The format of invitation is as shown below: Anand Institute of Information Science, Shri. Ramkrishna Seva Mandal Opp. Town Hall, Anand 388 001 Ph. No. (02696) 266062 To, The Director/Principal, The name of Institute´ ³The address of Institute´

6.	**Work sheet exercise** Insert a column. Number of Teams between columns Year and Tickets sold with values Insert a row between row 3 and row 4 with values. Delete column revenue, Rename the Sheet1 with name Format cells, Delete Sheet3. 6. Hide row 4. 7. Insert a sheet and rename it with name.
7.	**Table exercise** Complete the following tasks: a) Widen the first column to 15. b) Add a row beneath the details on Southampton to show the average monthly rainfall. c) Add a new column after the June rainfall statistics to show the total rainfall in each city over the period. d) The rainfall in Birmingham during March should be 58. e) Insert a new row between the rows holding the London and Sheffield rainfall statistics. Enter the following details: Newcastle 65 63 57 50 39 21 f) Copy the appropriate formula to obtain the total rainfall for Newcastle during the period
8.	**Table column exercises** Change the column width of column B to 15. 2. Change column width of column D to G to 20. 3. Change column width of column A and B to 14 4. Calculate Total Sales for each item and store result in column D. Hint: Total sales=Quantity * Unit Price. 5. Calculate Total Sales for all the items and store result in cell B6. 6. Copy Unit Price for PC in cell D7. Move Total sales from cell B6 to D8.
9.	**Insert remove columns of table** Complete the following tasks: a) Add a Units Used column to show the number of units of electricity used by each customer (Hint: Subtract the Previous Reading from the Present Reading). b) The cost of one unit of electricity is Rs.0.08. Add a Unit Cost column to show the cost of one unit. (This column will contain 0.08 in all of the relevant cells). c) Add a Units Charge column to show the total cost of the units used by each customer. (Hint: Unit Cost * Units Used) d) There is a standing charge of Rs.13.60 on each customer's account. Add a column to display this Standing Charge. (This column will contain Rs.13.60 in all of the relevant cells).
10.	**Math functions** The functions and commands required to solve the following assignment are as follows: Enter data - labels and values 1. Editing cell contents 2. Saving a spreadsheet 3. Altering column widths 4. Using the SUM function 5. Adding a new row after the last row of data 6. Adding a new column after the last column of data 7. Copying a formula 8. Using the AVERAGE, MIN, MAX function 9. Inserting a new row between existing rows Inserting a new column between existing columns
11.	**Table formatting using background color** Format the Student Grades so that your spreadsheet looks like the one below (you can use different colours, if you like).
12.	**Calculate total sale and commission** based on given details in table
13.	**Filter data of excel sheet** 1. Count number of order in Boston. 2. Count number of Microwave order. 3. Count number of journeys with truck 3. 4. Count number of Peter White journeys. 5. How many times is no. of items less than 20. 6. Display sum of refrigerator items. 7. Display sum of washing machine items. 8. Display sum of items transported by truck 4. 9. Sum of items transported by trucks.

	10. Number of microvawe orders in Boston . 11. Number of Peter White journeys with truck 1. 12. Number of orders in Boston after 2/3/2013: 13. Number of orders between 2/3/2013 and 2/6/2013: 14. sum of microwaves transported to NY: 15. sum of items transported to Pittsburgh by truck 1: 16. sum of items ordered between 2/3/2013 and 2/6/2013: 17. sum of items transported to NY, Baltimore and Philadelphia
14.	**Conditional formatting** do conditional formatting on the excel sheet in given data
15.	**Sorting** sort given data of excel sheet
16.	**Typing exercise** aq1 qa sw2ws de3ed fr4rf gt5tg queen 11 queens 1 apple 11 apples 2 wishes 22 wishes 2 swims 22 swims eddies 33 eddies 3 deeds 33 deeds 4 roses 44 roses 4 fish 44 fish tugs 55 tugs 5 goats 55 goats
17.	**Water mark and header footer** inserting and removing
18.	**Power point presentation** creating presentation
19.	**PPT** add timing and sound effects
20.	**Access create data base, tables** create db, tables
21.	**21. Access, relations between tables** relations between tables

Course: IMCA (A.Y.-4) **Semester:** 1

Prerequisite: Basic approach of Web Development

Rationale : The objective of this course is to familiarize students with concepts of fundamentals of web development and website designing

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	2	-	4	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Introduction to Internet**Overview of Internet: Concept of Internet, Evolution, Concepts of Intranets and extranets, Internet Applications: Email, Telnet, FTP World Wide Web: Concept, Web page: static, Dynamic, Active Scripting languages: Server side, Client Side. Web: Designing, Development and Publishing, HTTP, URL registration, browsers, Web serve	20	10
2	**Working with HTML**Internet Overview: Internet Concepts, Evolution, Intranet and Extranet Concepts, Internet Applications: Email, telnet, FTP Worldwide Web: Concepts, Websites: Static, Dynamic, Active Scripting Languages: Server Side, Client side. Web: Design, development, publishing, HTTP, URL registration, browser, web server	20	10
3	**Use of Style Sheets**Basics to Style Sheets, Formatting Text by Using Style Sheets, Formatting Paragraphs by Using Style Sheets, Displaying Graphics, External Style Sheet, Internal Style Sheet, Inline Style Sheet	25	12
4	**Layout and Navigation of Webpage**Create navigation aids, area-based layouts, create and format tables, create user forms with Javascript and external content	25	12
5	**Web Hosting**Publishing web Pages, HTML for Email	10	4
	Total	100	48

Reference Books

1.	**Internet for everyone (TextBook)** By Alexis Leon, Mathews Leon | Leon Tech World
2.	**“World Wide Web design with HTML”,** By C Xavier, | TMH
3.	**Step by Step HTML 5** By Faithe Wempen | Microsoft Press and PHI Learning | South Asian Edition
4.	**HTML: A Beginner's Guide 5/E** By HTML: A Beginner's Guide 5/E | McGraw Hill | 5th
5.	**HTML Black Book** By Steven Holzner | Dreamtech Press
6.	**Teach yourself Java Script in 24** By Michael Moncur Publisher | Pearson Education

Course Outcome

After Learning the Course the students shall be able to:
1.Explain the fundamentals of computer networks and apply the Bootstrap framework to design responsive web pages. 2.Create structured web pages using HTML and advanced features of HTML5 for enhanced functionality and design. 3.Design a pleasing and well-structured web layouts using CSS and CSS3 techniques. 4.Develop interactive web elements and dynamic content using JavaScript for client-side scripting.

List of Practical

1.	**Print your name**
2.	**Set Title**
3.	**bold, italic, underline and break tag**
4.	**print names in different colors**
5.	**different style font**
6.	**use different font size** Print a below paragraph. Each sentence should be a different font. HTML stands for Hyper Text Markup Language. It is the core language of the world wide web and is used to define the structure and layout of web documents by using various tags and attributes. Although a fundamental language of the web, HTML is a static language - content created with it does not change.HTML is used to specify the way webpages look, not how they function.
7.	**underlined, italic and bold** Print below paragraph that is a description of a book, include the title of the book as well as its author. Names should be underlined, italic and bold. One particular book which is recommended reading is The Street Lawyer by John Grisham. This book is about a lawyer who begins re- evaluating his priorities in life when a bad incident occurs within his law firm. Consequently, he becomes acquainted with the inner city streets, and realizes the harsh existence of the homeless, and vows to give them a chance in the courts. The Street Lawyer is a great book. It is well written and interesting. Other books by John Grisham include The Firm, The Pelican Brief, and The Client.
8.	**different heading size** Print Orange to the screen with every letter being a different heading size. O R A N G E
9.	**use superscript** Print the squares of the numbers 1 - 10. Each number should be on a separate line, next to it the number 2 superscripted, an equal sign and the result. (Example: 102 = 100)
10.	**different heading size** Print your name to the screen with every letter being a different heading size.
11.	**lists** Write a program Write a program to get following output : An ordered list with numbers (default): 1. Telephone 2. Cellular phone 3. Television 4. Fax machine An ordered list with lowercase letters: a. Telephone b. Cellular phone c. Television d. Fax machine An ordered list with uppercase letters: A. Telephone B. Cellular phone C. Television D. Fax machine An ordered list with lowercase roman numerals: i. Telephone ii. Cellular phone iii. Television iv. Fax machine An ordered list with uppercase roman numerals: I. Telephone II. Cellular phone III. Television IV. Fax machine
12.	**Unordered list** Write a program to get following output : An unordered list with disc bullets (default): , Telephone , Cellular phone ,

	Television , Fax machine An unordered list with square bullets: Telephone Cellular phone Television Fax machine An unordered list with circle bullets: o Telephone o Cellular phone o Television o Fax machine
13.	**definition list** Write a program to get following output : , Color 1. Red 2. Black 3. Yellow , Fruits & Vegetable i. Fruits F. Banana G. Orange H. Apple I. Pineapple ii. Vegetables Brinjal Okara Cabbage
14.	**horizontal lines** Prints an h1 level heading followed by a horizontal line whose width is 100%. Below the horizontal line print a paragraph relating to the text in the heading
15.	**preformatted text** Print some preformatted text of your choosing.
16.	**definition list** Print a definition list with 5 items.
17.	**links** Create links to five different pages on five different websites that should all open in a new window.
18.	**images** Display five different images. Skip two lines between each image. Each image should have a title.
19.	**image with border** Display an image that has a border of size 2, a width of 200, and a height of 200.
20.	**link to a search engine** Display an image that when clicked will link to a search engine of your choice (should be opened in a new window).
21.	**display the image in the browser** Display an image that when clicked will link to itself and will display the image in the browser by itself.
22.	**links to various search engines** Create some links to various search engines (google, yahoo, altavista, lycos, etc).
23.	**link at the bottom of the page** Create a page with a link at the bottom of it that when clicked will jump all the way to the top of the page.

24.	**link at the top of the page** Create a page with a link at the top of it that when clicked will jump all the way to the bottom of the page. At the bottom of the page there should be a link to jump back to the top of the page.
25.	**hyperlinks on mail** Write a Program to demonstrate hyperlinks on mail.
26.	**using special character** Write a code to display following output by using special character P A R U L
27.	**inline stylesheet** Write a program to demonstrate inline stylesheet
28.	**internal stylesheet** Write a program to demonstrate internal stylesheet
29.	**external stylesheet** Write a program to demonstrate external stylesheet
30.	**CSS Comment** Write a program to demonstrate CSS Comment
31.	**font property by using external stylesheet** Write a program to demonstrate all font property by using external stylesheet.
32.	**class selector** W.A.P to demonstrate class selector.
33.	**ID Selector** W.A.P to demonstrate ID Selector
34.	**HTML Selector** W.A.P to demonstrate HTML Selector.
35.	**insert an image via CSS** W.A.P to and vertically repeat it. Also add background color in web page.
36.	**text property by using inline stylesheet.** Write a program to demonstrate all text property by using inline stylesheet.
37.	**list property by using external stylesheet** Write a program to demonstrate all list property by using external stylesheet.
38.	**margin property by using internal stylesheet** Write a program to demonstrate all margin property by using internal stylesheet.
39.	**padding property by using external stylesheet** Write a program to demonstrate all padding property by using external stylesheet.
40.	**border property by using external stylesheet** Write a program to demonstrate all border property by using external stylesheet.
41.	**border**

	W.A.P to demonstrate only top and bottom border. Top border color should be red and bottom border color should be blue. Top border style should be dashed and bottom should be double.
42.	**border only 3 side** W.A.P to demonstrate border only 3 side. All three side have different border type.
43.	**thumbnail** W.A.P to demonstrate thumbnail. Image should be open in new tab.
44.	**hyperlink CSS Style** W.A.P to demonstrate hyperlink CSS Style.
45.	**table** Write a program to create following table. Name Post Salary Geeta Manager 20000 Ravi clerk 5000 Mohan clerk 5000 Shyam Clerk 5000
46.	**table formatting with background color** Write a program to get following output. Name Post Salary Geeta Manager 20000 Ravi clerk 5000 Mohan Clerk 5000 Shyam 5000
47.	**web page** Create following user registration form
48.	**validation** Create following student registration form with proper validation. Use CSS for formatting effect.

Course: IMCA (A.Y.-4) **Semester:** 1

Prerequisite: Basic approach of problem-solving methods

Rationale : The objective of this course is to familiarize students with concepts of fundamentals of information technology along with developing the logic for solving a given problem using the procedure-oriented language C for construction of code

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	4	-	5	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Introduction of C**History, Algorithm and flowchart, Structure of C, Elements of C: Character set, C Tokens, Keywords Identifiers, Variables, Constant Data Types, Comments, C Programming Applications and Importance, Operators: What is operator? Types of operators, Built-in Operators: Input/output operators, Concept of header files	10	5
2	**Importance of Classes and Pre-Processor**Introduction, Different pre-processors: #include, #define , Importance. Storage Classes: Automatic, External, Static and Register Variables, Decision Making / Control Statements: If, If Else, Nested if, Switch, looping statements: For, Nested for, While, Do while, Other statements: Break, Continue, Goto, exit.	10	5
3	**Use of Array**Declaration, Initialization, Access of one dimensional & two-dimensional arrays, Programs using one- and two-dimensional arrays: Adding multiplying, Transposing matrices: sorting and searching arrays	20	10
4	**Use of Function, Structure and Union**Definition, need of function, Types of function, Built-in and User define Functions, User define Functions, Categories of functions: With/without arguments, With/without return values, Recursion, Functions with arrays, The scope, visibility & lifetime of variables. Structure definition, Giving values to members, Structure initialization, Comparison of structure variables, Arrays of structures, Arrays within structures, Structures within structures, Structures & functions, Unions Size of structures	25	12
5	**Working with Strings and Pointer**Understanding pointers, Accessing the address of a variable, Declaring & initializing pointers, accessing a variable through its pointer, Pointer expression, Pointer increments & scale factor, Pointers & arrays, Passing pointer variables as function arguments. Declaring & initializing string variables, reading strings from terminal, writing strings to screen, Arithmetic operations on characters, putting strings together, comparison of two strings, string handling functions, table of strings	20	10
6	**Files Structure and operations**i. Opening a File, ii. Reading a File iii. Closing a File Text modes I/O operations on files Binary modes Command line arguments File function fprintf() ii. fscanf() iii.getc() iv.putc() v. fgetc() vi.fputc() vii.fseek () viii. feof()	15	6
	Total	100	48

Reference Books

1.	**Programming in ANSI C** By E. Balaguruswamy | Tata McGraw-Hill
2.	**The C Programming Language (TextBook)** By Brian W. Kerningham and Dennis M. Ritchie | PHI
3.	**Programming with C** By K.R. Venugopal and Sudeep R Prasad | Tata McGraw-Hill Education
4.	**Let Us C** By Yeshavant Kanetkar | BPB Publications

Course Outcome

After Learning the Course the students shall be able to:
1.Understand the basic concepts and features of the C programming language and its applications in software development. 2.Explain the role of classes and pre-processors in C programming, and utilize pre-processor directives effectively in code. 3.Implement arrays, strings, and pointers to solve complex programming problems and manage data efficiently. 4.Design and implement programs using functions, structures, unions, and file operations for structured and efficient code management.

List of Practical

1.	**WAP to Add Two Integers**
2.	**WAP to Floating Point Numbers**
3.	**WAP to print ASCII Value of a Character**
4.	**WAP to Find Quotient and Remainder**
5.	**WAP to Swap Two Number**
6.	**WAP to Find Area of Circle**
7.	**WAP to Find Simple interest**
8.	**WAP to Sum of 5 subjects and Find total and percentage**
9.	**WAP to Find Gross salary of an employee**
10.	**WAP to Find a Number is Even or Odd**
11.	**WAP to Find Roots of a Quadratic equation**
12.	**WAP to Check Whether a Character is an Alphabet or not**
13.	**WAP to Find Sum of Natural Number**
14.	**WAP to Find Factorial of a Number**
15.	**WAP to Print following patterns**

16.	WAP to print Fibonacci Series
17.	WAP to Find GCD of two Numbers
18.	WAP to Find LCM of two Numbers
19.	WAP to Display Character from A to Z Using Loop
20.	WAP to Reverse a Number
21.	WAP to Check Whether a Number is Palindrome or Not
22.	WAP to Find Prime Numbers Between Two Intervals
23.	WAP to Check Number is perfect
24.	WAP to Create Pyramid and Structure
25.	WAP to Draw Pascal's triangle
26.	Write a menu-driven program using Switch case to calculate the following Area of circle Area of square Area of sphere
27.	Write a menu-driven program using Switch case to create calculator
28.	WAP to calculate square and cube of a given number using function
29.	WAP to swap two numbers using function
30.	WAP to calculate area of circle using function and with all four categories
31.	WAP to add two distance using function.(Use inch and feet for the calculation)
32.	WAP to calculate sum of elements of 1D array using function
33.	WAP to find factorial of a number using function
34.	WAP to add two 2D arrays using function
35.	WAP to store records for book and also display using structure
36.	WAP to print and display records of employee details using array of structure
37.	WAP to display marks of 3 subjects for 3 students and then calculate total for subject wise and then make grand total
38.	WAP to display Id, name and percentage of a student using structure and function passing by value
39.	Write a C program to create a structure student, containing name and roll. Ask user the name and roll of a student in main function. Pass this structure to a function and display the information in that function
40.	WAP to access addresses of different types of variable using pointer. (Include all type of variables)
41.	WAP to swap two integers using pointers
42.	WAP to compute area and perimeter of rectangle using pointers as parameter to function
43.	WAP to store values of array and display it using pointers

44.	Write a C program to read string from terminal. Using scanf(), gets to read a string
45.	WAP to pass string to a function and find length of it
46.	WAP to concatenate two strings and copy the string 1 to string 2
47.	WAP to sort elements in lexicographical order (dictionary order ascending order)
48.	WAP to convert binary numbers to decimal and vice a versa
49.	Write a C program to read name and marks of n number of students from user and store them in a file
50.	Write a C program to read name and marks of n number of students from user and store them in a file. If the file previously exits, add the information of n students
51.	Write a C program to write all the members of an array of structures to a file using fwrite(). Read the array from the file and display on the screen

Course: IMCA (A.Y.-5) **Semester:** 2

Prerequisite: Basic approach of problem solving methods

Course Objective: • To plan, schedule, and monitor the software project • Development, coding, and testing of a minor project cohesively. • Documentation of project.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
-	-	6	-	3	-	20	20	-	60	100

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Guidelines** It is recommended that the team should be of 2-3 students. Project plan along with the division of work amongst teammates would have been prepared and got approved within a maximum of 5 days of the start of the project. Coding standards should be followed meticulously. At the minimum, the code should be self documented, modular, and should use meaningful naming convention. Data structure (database design) is mandatory. At least a portion of code (preferably full code) is mandatory. Student may be asked to write the code related to the project during examination. If a student is compelled to follow certain instructions (by the external, i.e. organization's guide) which he/she does not agree to, such a student must prepare a supplementary report to document his/her version and present it to the examiners if such a need arises. Internal guides (i.e. the faculty members) must devote the time allocated as per the time table to guide the students for the project. The time allocation will be in accordance with the scheme for 2nd semester. **Criteria for Evaluation of Software Projects** Project Definition: 10% Related project Study Analysis: 20 % Design & Development: 40% Implementation & Testing: 10% Creation of Project Report and User Manual: 20%	**100**	**60**

Course Outcome

After Learning the Course the students shall be able to:

1. Working on the project will enable a student to go through rich experience in developing user defined projects.
2. Such an experience will include encountering various technical issues, finding sources to resolve the issues and finally arriving at the solution of all these issues satisfactorily.
3. Ability to document and write well. Organizing the time effectively.
4. Working with teammates and generating substantial output of the team's efforts. It will prepare the students for analyzing and programming for industrial problems and large projects in future.

Miscellaneous

Exam Requirement

Project Report Submission

Course: IMCA (A.Y.-5) **Semester:** 2

Prerequisite: Basic knowledge of Programming

Course Objective: To acquire fundamental knowledge of python programming and programmers to create robust, maintainable, and scalable applications while maintaining simplicity and readability.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	2	-	4	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Introduction to Python** The Python programming language, What is a program?, What is debugging?, The first program. **Variables, expressions and statements** Values and types, Variables, Variable names and keywords, Statements, Operators and operands, Expressions, Order of operations, Comments, Debugging.	10	5
2	**Operators** Modulus operator, Boolean expressions, Logical operators, Conditional execution, Alternative execution, Chained conditionals, Nested conditionals	10	5
3	**User Defined Function and Introduction to Packages** **Functions:** Function calls, Type conversion functions, Math functions, Composition, Adding new functions, Definitions and uses, Parameters and arguments, Variables and parameters are local, Fruitful functions and void functions, Why functions?. Recursion Function **Introduction to Packages:** Usage of Packages, Installation of Packages, brief introduction to NUMPY Package	20	9
4	**Python Data Structure – I** **Strings,** A string is a sequence, Len, Traversal with a for loop, String slices, Strings are immutable, Searching, Looping and counting, String methods, The in operator, String comparison, Debugging. **List** ListA list as a sequence, Lists are mutable, Traversing a list, List operations, List slices, List methods, Map, Filter and reduce, Deleting elements, Lists and strings, Objects and values, Aliasing, List arguments.	25	12
5	**Python Data Structure – II** **Tuples, Set, Dictionary** **Tuples:** Python Tuples, Accessing values in Tuples, update and delete tuples Basic tuples operation, Built in Tuples Function, List Vs Tuples. **Set:** Defining set, create and accessing values in a set, set Methods, Frozenset Dictionary: What is python Dictionary, Creating a Dictionary, Adding elements to a Dictionary, Accessing and removing an elements from Dictionary, Dictionary Methods	25	12
6	**File Operations** Need of a file. Opening, closing and read/write operations in file.	10	5

Reference Books	
1.	**Think Python, How to Think Like a Computer Scientist (TextBook)** By Allen Downey | Green Tea Press Needham, Massachusetts.
2.	**Beginning programming with Python for Dummies** By John Paul Mueller | John Wiley & Sons

Course Outcome

After Learning the Course the students shall be able to:
1. Explain Python programming fundamentals and effectively use operators to manipulate data and perform calculations. 2. Implement basic data structures in Python, such as lists, tuples, and dictionaries, to manage and organize data. 3. Create user-defined functions and utilize Python packages for modular programming and efficient file handling. 4. Analyze and implement advanced data structures like sets and queues for efficient data processing and storage.

Course: IMCA (A.Y.-4) **Semester:** 2

Prerequisite: Basic knowledge of Data and Data Processing

Course Objective: Provide Conceptual insight about how database design and implementation takes place and relational operations of database

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	-	2	-	4	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Overview of Database Management System**, Data, Information , Data Management , File-based Data Management , Database , Database Systems , Organization of a Database , Characteristics of Data in a Database , DBMS, Benefits of DBMS , Functions ,Components of DBMS , Data dictionary, Database Users , Database Architecture , Data abstraction , ANSI/SPARC Architecture , Logical and Physical data independence , Database languages, Database Design , Database constraints	20	10
2	**Overview of Data Model and Entity Relationship ModelData Model** Conceptual , Physical and Logical Database Models , Database relationships , Hierarchical model , Network Model , Relational Model , E-R model **Entity Relationship Modeling** E-R Model, Components of an E-R Model , E-R conventions , Relationships , Composite entities , Entity list, E-R diagrams , E-R Modeling symbols , Super class , Subclass entity types , Attribute inheritance , Specialization, Generalization , Specialization/ generalization constraints, , Categorization	20	10
3	**Relational Database Design and Normalization Relational Database Design**Relational Algebra operations , Aggregate functions , Update operations , Types of relational calculus , Domain relational calculus **Relational Algebra and Calculus** Relational Data structure , Relational data manipulation , Integrity constraints , Pitfalls of Relational database design , Decomposition , Functional dependencies , Normalization,Keys , Relationships , First Normal Form(1NF) , Second Normal form(2NF) , Third normal Form (3NF) , Boyce-Codd Normal Form (BCNF) , Fourth Normal Form (4NF) Fifth Normal Form (5NF) , Lossless join dependency , Domain-Key Normal Form (DCNF) , Denormalization	25	12
4	**Object and Extended Relational Database**Database design for an ORDBMS, Nested relations and collections, Storage and access methods, An overview of SQL3, Systems comparison of RDBMS, OODBMS and ORDBMS.	10	4
5	**Usage of PL/SQL, Cursor and Trigger and Stored Procedures: PL/SQL, Cursor and Trigger**Basic code structure, Variables, Conditional statements, looping (loop statements, while loops, for loops, cursor FOR loops), Triggers. **Stored Procedures** Understanding the main features of stored procedures, stored procedure architecture, Advantages of using procedures. Stored procedures - functions, procedures and packages.	25	12

Reference Books

1.	**Database System Concepts** By Silberschatz, Korth, Sudarshan | McGraw Hill Publication | 4th Edition
2.	**An Introduction to Database Systems** By C. J. Date, A. Kannan, S. Swamynathan | Pearson Education | 8th Edition
3.	**Database Systems: Concepts, Design and Applications** By S. K. Singh | Pearson Education
4.	**SQL, PL/SQL – The Programming Language** By Ivan Bayross | BPB Publications
5.	**Database Management Systems** By Raghu Ramakrishnan, Johannes Gehrke | McGraw Hill Publication

Course Outcome

After Learning the Course the students shall be able to:

1. Explain the fundamentals of database management systems and analyze various data models, including the entity-relationship model, for database design.
2. Apply normalization techniques and relational database design principles to create efficient and well-structured databases.
3. Evaluate object-oriented and extended relational database concepts to manage complex data types and relationships.
4. Develop and implement PL/SQL scripts, utilizing cursors, triggers, and stored procedures to automate database tasks and ensure data integrity.

List of Practical

1. **Create a table for Customer.**

Column Name	Format
cust_id	char(5)
Lname	char(15)
Fname	char(15)
Area	char(2)
phone_no	number(8)

2. **Create a table for Movie**

Column Name	Format
mv_no	number (5)
Title	char(25)
Type	char(10)
Star	char(25)
Price	number(8,2)

3. **Create a table for invoice**

Column Name	Format
inv_no	char(3)
mv_no	number(5)
cust_id	char(5)
issue_date	date
return_date	date

4. **Insert the below Record in the Customer table.**

Cust_id	lname	fname	area	Phone_no
a01	Patel	Vijay	sa	381334
a02	Saitwal	Vandana	mu	556037
a03	Jaguste	Pramada	da	372631

	a04	Navindgi	Basu	ba	666612
	a05	Sreedhran	Ravi	va	-
	a06	-	Rukmini	ga	512527

5. **Insert the below record in the Movie table**

mv_no	title	type	Star	Price
1	Bloody Vengeance	action	Jackie Chan	180.95
2	The firm	thriller	Tom Cruise	200.00
3	Pretty woman	romantic	Richarge Gere	150.00
4	Home alone	comedy	Macaulay Culkin	150.55
5	The fugitive	thriller	Harrison Ford	200.00
6	Coma	suspence	Michael Douglas	100.00
7	Dracula	horror	Gray Oldman	150.00
8	Quick change	comedy	Bill Murray	100.00
9	Gone with the wind	drama	Clarke Gable	200.00
10	Carry on doctor	comedy	Leslie Phillips	100.00

6. **Insert the below record in the invoice table**

inv_no	mv_no	cust_id	issue_date	return_date
i01	4	a01	13-jan-96	25-jan-96
i02	3	a02	12-feb-96	15-feb-96
i03	1	a02	15-feb-96	18-feb-96
i04	6	a03	10-mar-96	13- mar -96
i05	7	a04	05-feb-96	08-feb-96
i06	2	a06	18-mar-96	21-mar-96
i07	9	a05	07-jan-96	10-jan-96
i08	9	a01	11-feb-96	14-feb-96
i09	1	a05	15-feb-96	28-feb-96

7. **Do the Following:**

Create the table Client_Master

Column Name	**Data Type**	**Size**
CLIENTNO	Varchar2	6
NAME	Varchar2	20
ADDRESS	Varchar2	50

CITY	Varchar2	20
PINCODE	Int	8
STATE	Varchar2	20
BAL_DUE	Decimal	10,2

Insert the following data into table

CLIENTNO	NAME	ADDRESS	CITY	PINCODE	STATE	BAL_DUE
C0001	Rohan Joshi	Khapaitya Chakla	Surat	395003	Gujarat	15000
C0002	Mamta Mazumdar	Salt Lake	Kolkata	460012	West Bengal	5000
C0003	Chhaya Bankar	Worli	Mumbai	400054	Maharashtra	2000
C0004	Ashwini Rathod	Ghangaur Ghat	Udaipur	780011	Rajasthan	7000
C0005	Ivan Bayross	Indiranagar	Bangalore	560050	Karnataka	1500
C0006	Deepak Sharma	Bandra	Mumbai	400002	Maharashtra	4300
C0007	Shymali Bhide	Juhu	Mumbai	470912	Maharashtra	2100

Queries:

1. List the details of the client according to the bal_due
2. List all clients who are located in Mumbai
3. Show different types of state in “Client_Master” table by eliminating the repeated states.
4. Change the city of client no “C0005” to Mangalore.
5. Change the bal_due of client no “C0001” to Rs. 1000
6. Delete from Client_master where the state holds the value ”Rajasthan”
7. Add a column name “Mobile” of data type “Number” & size=”10”.
8. Create a table “Balance_Details” having three 3 fields (ClientNo, Name, Bal_Due) from the source table name “Client_master” and rename the field Bal_Due to Balance.
9. Change the name of “Client_Master” table to “Customer”

8. **DO the Following:**

Table Name : Employee

Employee_no	First_name	Last_name	Salary	Joining date	Department
1	John	Abraham	100000	01-JAN-13	Banking
2	Michael	Clarke	80000	01-APR-13	Insurance
3	Roy	Thomas	70000	21-May-13	Banking
4	Tom	Jose	60000	08-Dec-13	Insurance
5	Jerry	Pinto	65000	11-Feb-14	Marketing
6	Philip	Mathew	45000	01-Jul-14	Services
7	John	Henry	55000	01-Jan-15	Technical
8	Ivan	Bayross	60000	01-Aug-15	Sales

Table Name : Incentives

Employee_Ref_Id	Incentive_date	Incentive_amount
1	01-Feb-13	5000
2	01-Dec-13	3000
3	01-Mar-13	4000
4	21-Mar-15	4500
5	01-Sep-15	3500

Queries:

1. Create primary key Employee_id in Employee Table
2. Create EMPLOYEE_REF_ID in INCENTIVES table as foreign key with respect to EMPLOYEE_ID in employee table
3. Get all employee details from the employee table
4. Get First_Name,Last_Name from employee table.
5. Get First_Name from employee table using alias name “Employee Name”
6. Get First_Name from employee table in upper case
7. Get First_Name from employee table in lower case.
8. Get unique DEPARTMENT from employee table

9. Queries of Employee table.

1. Get all employee details from the employee table order by First_Name Ascending
2. Get all employee details from the employee table order by First_Name descending
3. Get all employee details from the employee table order by First_Name Ascending and Salary descending
4. Get employee details from employee table whose employee name is “John” (like)
5. Select * from EMPLOYEE where FIRST_NAME='John'
6. Get employee details from employee table whose employee name are “John” and “Roy”
7. Get employee details from employee table whose first name starts with 'J'
8. Get employee details from employee table whose first name contains 'o'
9. Get employee details from employee table whose first name ends with 'n'
10. Get employee details from employee table whose first name ends with 'n' and name contains 4 letters
11. Get employee details from employee table whose first name starts with 'J' and name contains 4 letters
12. Get employee details from employee table whose Salary greater than 60000
13. Get employee details from employee table whose Salary less than 80000
14. Get employee details from employee table whose Salary between 50000 and 80000
15. Get employee details from employee table whose name is 'John' and 'Michael'.
16. Get position of 'o' in name 'John' from employee table (skip)

	17. Get employee details from employee table whose salary is minimum 18. Get employee details from employee table whose salary is maximum 19. Count the total number of department from employee table 20. Calculate the average salary of employee from employee
10.	**Queries** 1. Get First_Name from employee table in upper case 2. Get First_Name from employee table in lower case. 3. Get position of 'o' in name 'John' from employee table 4. Select first 3 characters of FIRST_NAME from EMPLOYEE 5. Get FIRST_NAME from employee table after removing white spaces from right side 6. Get FIRST_NAME from employee table after removing white spaces from left side. 7. Get length of FIRST_NAME of all employees from employee table 8. Get First_Name from employee table after replacing 'o' with '$' 9. Get First_Name and Last_Name as single column from employee table separated by a '_' 10. Get FIRST_NAME ,Joining year, Joining Month and Joining Date from employee table separated by '_' 11. Get employee details from employee table whose joining year is “2013”. 12. Get employee details from employee table whose joining month is “January” 13. Get employee details from employee table who joined before January 1st 2013 14. Get employee details from employee table who joined after January 31st 15. Get Joining Date and Time from employee table 16. Get difference between JOINING_DATE and INCENTIVE_DATE from employee and incentives table.
11.	**Queries** 1. Find out how many employees are there in each department 2. Find out total salary per department. 3. Find out the average salary per department. 4. Show list of departments who has more than 1 employee 5. Show list of department whose total salary is greater than 50000 6. Show list of department whose average salary is less than 50000 7. Show list of department whose average salary is between 50000 and 80000 8. Show the total no of employees whose joining month is same.

9. Show the total no of employees whose joining year is same.

10. Find total salary who have joined in same month

11. Find total salary who have joined in same month and total salary is greater than 50000

12. Select employee details from employee table if data exists in incentive table

13. Display the employee name of all those who received their intencives

14. Find out the employees who have their incentives less than 5000

15. Update incentive table where employee name is 'John'

16. Select first_name, incentive amount from employee and incentives table for those employees who have incentives

17. Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000

18. Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount less than 3000

19. Select first_name, incentive amount from employee and incentives table for all employes even if they didn't get incentives

12. **Do the Following**

Create a table as following:

Dept deptno	Dname	Loc
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

Emp_no	Ename	Job	Mgr	hiredate	Sal	Comm	Deptno
7839	King	President	-	17-11-1981	5000		10
7698	Blake	Manager	7839	01-05-1981	2850		30
7782	Clerk	Manager	7839	09-06-1981	2450		10
7566	Jones	Manager	7839	02-04-1981	2975		20
7788	Scott	Analyst	7566	13-07-1987	3000		20
7902	Ford	Analyst	7566	03-12-1981	3000		20
7369	Smith	Clerk	7902	17-12-1980	800		20
7499	Allen	Salesman	7698	20-02-1981	1600	300	30
7521	Ward	Salesman	7698	22-02-1981	1250	500	30

7654	Martin	Salesman	7698	28-09-1981	1250	1400	30
7844	Turnor	Salesman	7698	08-09-1981	1500		30
7876	Adams	Clerk	7788	13-07-1987	1100		20
7900	James	Clerk	7698	03-12-1981	950		30
7934	Miller	Clerk	7782	23-01-1982	1300		10

Queries:

1. Select all record from emp table where deptno =10 or 40.
2. Select all record from emp table where deptno=30 and sal>1500.
3. Select all record from emp where job not in SALESMAN or CLERK.
4. Select all record from emp where ename in 'BLAKE','SCOTT','KING'and'FORD'
5. Select all records where ename starts with ‘S’ and its lenth is 6 char.
6. Select all records where ename may be any no of character but it should end with ‘R’.
7. List the emps who are joined in the year 1981
8. List the emps who are joined in the month of Aug 1980
9. Display the avg salaries of all CLERKS
10. List all the emps except ‘president’ & ‘Manager’ in asc order of salaries
11. Count MGR and their salary in emp table.
12. In emp table add comm+sal as total sal.
13. Select any salary <3000 from emp table.
14. Select all salary <3000 from emp table.
15. Select all the employee group by deptno and sal in descending order.
16. List the emps who are working under Manager
17. List all the clerks of deptno 20
18. Find the 3rd MAX salary in the emp table.
19. Find the 3rd MIN salary in the emp table.

13. PL/SQL Programs

1. Hello World Program in PL/SQL.
2. PL/SQL Program To add Two Numbers.
3. PL/SQL Program For Prime Number.
4. PL/SQL Program To Find Factorial of a Number.
5. PL/SQL Program to Print Table of a Number.
6. PL/SQL Program for Reverse of a Number
7. PL/SQL Program for Fibonacci Series
8. PL/SQL Program to Check Number is Odd or Even
9. PL/SQL Program to Reverse a String
10. Pl/SQL Program for Palindrome Number
11. PL/SQL Program to Swap two Numbers

	12. PL/SQL Program for Armstrong Number 13. PL/SQL Program to Find Greatest of Three Numbers 14. PL/SQL Program to Print Patterns
14.	**PL/SQL Cursor Programs** 1.Write a Program for Implicit Cursor 2. Write a Program For Explicit Cursor
15.	**Trigger Programs** Create three tables **Student (Roll_no, Name, Contact, Marks)** **Student_copy (Roll_no, Contact)** **Student_update_copy (Roll_no, New_Contact, Old_contact)** A. Create a trigger to insert Roll no and Contact number of student on insertion of any record in Table Student. B. Create a trigger to insert Roll no New Contact number and old Contact number of student on updation of contact number in Table Student.
16.	**Procedure Programs.** 1. Write a procedure to insert data in employee table. 2. Write a procedure to update contact number of employee in employee table. 3. Write a procedure to find name of manager for given employee id. 4. Write a procedure to get all the details (emp_id, name, city of residence, 5. company name, city of work, manager name, salary) of given employee id.

Course: IMCA (A.Y.-4) **Semester:** 2

Prerequisite: Basic Knowledge of HTML and Internet

Course Objective: Web Development skills for Computer Science Student.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	4	-	5	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Introduction to Website**Introduction Websites : Static and Dynamic, Client side & Server Side Scripting ,Web Server (IIS & Apache), Protocols : HTTP,HTTPS & FTP, ISP and its Services, Web Hosting, Virtual Host, Multi-Homin Document Root	5	2
2	**Installation and Configuration of PHP:**System Requirements for PHP, PHP installation & Configuration in IIS / Apache Web Server, Working with WAMP / XAMP, Php.ini & .ht access files	5	2
3	**Basics of PHP:**Overview of PHP, PHP syntax, How PHP Code Works, Creating & Running PHP Webpage, PHP variable & its scope : local, global, static, parameter, PHP Operators, Conditional Structure, Looping Structure	10	5
4	**Usage of PHP Arrays & Functions:**PHP Array, Indexed Arrays, Associative Arrays, Loop through Indexed & Associative Arrays, Array Lib. Functions : Count, current, next, previous, end, sort, rsort, assort, arsort, array_merge, array_reverse, array_diff(), array_shift(), array_slice(), array_unique(), array_unshift(), array_keys(), array_key_exists(), array_push(), array_pop(), array_multisort(), array_search(), PHP Functions, Functions with arguments, Miscellaneous Functions : define, constant, include, require, header, die, exit.	10	5
5	**Handling Form in PHP:**HTML Form element & its attributes, Send Form data using GET Method & POST Method, Receive Form data using $_GET, $_POST & $_REQUEST variables, File uploading, Mail sending using mail()	10	5
6	**PHP Cookies & Session**Cookies, Session, Hidden fields.	5	2
7	**MySQL Database Functions:**Introduction to MySQL, MySQL Data Types. **MySQL functions:** mysql_connect, mysql_close, mysql_error, msyql_errno, mysql_select_db, mysql_query, mysql_fetch_array, mysql_num_Rows, mysql_affected_Rows, mysql_fetch_assoc, mysql_fetch_field ,mysql_fetch_object,mysql_fetch_ row ,mysql_insert_id, mysql_num_fields, mysql_result, mysql_tablename , mysql_list_tables, mysql_list_field s, mysql_field_type , mysql_db_name ,mysql_db_query , mysql_data_seek	15	7
8	**Working with Object Oriented Programming using PHP:**Classes & Objects, Constructor & destructor, Declaring & accessing methods & Properties, Inheritance, Abstract class & methods, Exception handling	10	5
9	**Usage of Ajax & Jquery in PHP**Introduction to Ajax, How Ajax works with PHP, Introduction to JQuery, How JQuery works, Jquery Syntax, Jquery Selectors, Jquery Events & Methods, Jquery Effects.	15	7
10	**Content Management System tools:**Introduction to CMS, overview of CMS, Advantages of CMS, Word press [Introduction & Installation], working with word press , themes , plugins, widgets, user roles, creating Posts & Pages.	15	8

Reference Books

1.	**Beginning PHP – wrox** By by Matt Doyle | wrox.
2.	**PHP Bible** By Tim Converse, Joyce Park | First Edition
3.	**Professional PHP 5** By Ed Lecky-Thompson, Heow Eide-Goodman, Steven D. Nowicki, Alec Cove

Course Outcome

After Learning the Course the students shall be able to:
1.Explain the basic concepts of web development and install, configure, and use PHP to create dynamic web pages. 2.Apply PHP arrays and functions to manage data and process user inputs through forms efficiently in web applications. 3.Integrate Ajax and JQuery with PHP for asynchronous web functionality and explore the use of content management systems for website development. 4.Develop secure, database-driven applications using PHP cookies, sessions, MySQL functions, and object-oriented programming principles.

List of Practical

1.	**display hello world** Write a PHP Script that will display hello world
2.	**calculate sum** **Write PHP script that will take three integer values for and calculate sum of it.**
3.	**calculate average of three values** **In above PHP script calculate average of three values**
4.	**take two strings and concatenate it.** **Write a PHP Script that will take two strings and concatenate it.**
5.	**swap two integer values** Write a PHP Script that will assign two integer values and swap their values.
6.	**swap two integer values without third variable.** **Write PHP Script that will assign two integer values and swap their values without third variable.**
7.	**perform arithmetic operations** **Write a PHP Script that will assign two integer values that will perform arithmetic operations and display it in tabular format**
8.	**two numbers and check their equality**

	Write a PHP Script that will assign two numbers and check their equality
9.	**check they are identical or not** **Write a PHP Script that will assign two numbers and check they are identical or not**
10.	**check number is positive or negative** **Write a PHP Script that will check number is positive or negative**
11.	**Even or Odd** **Write a PHP Script that will check number is Even or Odd.**
12.	**check number is divisible by 13 and 7** **Write a PHP Script that will check number is divisible by 13 and 7**
13.	**Pattern** **1** **12** **123** **1234**
14.	**pattern** **1** **22**

	333 **4444**
15.	**Pattern** **1234** **123** **12** **1**
16.	**pattern** **4444** **333** **22** **1**
17.	**nested for loop that creates a chess board** **Write a PHP script using nested for loop that creates a chess board as shown below.**
18.	**find out max number.** **Write a PHP function that will take three integer values and find out max number.**
19.	**function that will take an integer value and return sum of digits.** **Write a PHP function that will take an integer value and return sum of digits.**
20.	**calculate the factorial of a number** **Write a function to calculate the factorial of a number (non-negative integer). The function accept the number as a argument**
21.	**check a number is prime or not** **Write a PHP function to check a number is prime or not.**

22.	**reverse a string.** **Write a PHP function to reverse a string.**
23.	**function that checks whether a passed string is palindrome or not** **Write a PHP function that checks whether a passed string is palindrome or not?**
24.	**simple PHP class which displays the following string : 'MyClass class has initialized !'** **Write a simple PHP class which displays the following string : 'MyClass class has initialized !'**
25.	**simple PHP class which displays an introductory message** **Write a simple PHP class which displays an introductory message like "Hello All, I am ALKA", where "ALKA" is an argument value of the method within the class.**
26.	**sorts an ordered integer array** Write a PHP class that sorts an ordered integer array with the help of sort() function
27.	**PHP Calculator** **Write a PHP Calculator class which will accept two values as arguments, then add them, subtract them, multiply them together, or divide them on request.**
28.	**Calculate the difference between two dates using PHP OOP approach.** **Calculate the difference between two dates using PHP OOP approach.** ***Sample Dates*** **: 1981-11-03, 2013-09-04** ***Expected Result :*** **Difference : 31 years, 10 months, 1 days**
29.	**convert string to Date and Date Time** **Write a PHP script to convert string to Date and DateTime.** ***Sample Date :*** **'12-08-2004'** ***Expected Output :*** **2004-12-08** **Note : PHP considers '/' to mean m/d/Y format and '-' to mean d-m-Y format.**

30.	take name and message from user and display it. **Write a HTML Form & PHP Script that will take name and message from user and display it.**
31.	guessing game, **Write a PHP Script for guessing game,which will take one number from user and check that number is right or wrong**
32.	count the number of guessing attempts using hidden fields **In above PHP Script count the number of guessing attempts using hidden fields**
33.	displays the marksheet of the student. **Write a php page and create a user form which asks for marks in five subjects out of 100 and then displays the marksheet of the student. The format is as follows:** Name of Student*: Marks in Each Subject Subject 1* : **Subject 2* : Subject 3* :** Subject 4* : **Subject 5* :** Total Marks Obtained: **Total Marks:** **Note: All the entries marked (*) are to be input by the user. And use a submit button to post the** entries in the form using the POST method. **1.Write a php page and create a user form which asks for marks in five subjects out of 100 and**

	then displays the marksheet of the student. The format is as follows: Name of Student*: **Marks in Each Subject Subject 1* :** Subject 2* : **Subject 3* :** Subject 4* : **Subject 5* :** Total Marks Obtained: **Total Marks:** , **Note: All the entries marked (*) are to be input by the user. And use a submit button to post the entries in the form using the POST method.**
34.	send mail Write a PHP Script that will be used for mail send.
35.	Write a php script that will help to upload a file.
36.	create an IMCA database Write a PHP that will create an IMCA database
37.	create sem_5 table under IMCA Database Write a PHP Script that will create sem_5 table under IMCA Database
38.	insert data into sem_5 table. Write a PHP Script that will insert data into sem_5 table.
39.	display records of sem5 table in tabular format. Write a PHP Script that will display records of sem5 table in tabular format.

40.	delete records from sem_5 table. Write a PHP Script that will delete records from sem_5 table.
41.	drop table sem_5 from database Write a PHP Script that will drop table sem_5 from database
42.	load content from text file using ajax. Write a PHP Script that will load content from text file using ajax.
43.	suggest name list to user on key enter event using ajax Write a PHP Script that will suggest name list to user on key enter event using ajax
44.	display employee information on selection of name using ajax. Write a PHP Script that will display employee information on selection of name using ajax.
45.	jquery code that hide / show text on button click event Write a jquery code that hide / show text on button click event
46.	jquery code that will fade in, fade out,fade toggle images on click event Write a jquery code that hide / show text on button click event
47.	slide up, slide down and slide toggle panel on click event. Write a jquery code that will slide up, slide

Course: IMCA (A.Y.-4) **Semester:** 2

Prerequisite: Basic knowledge of software / UML design

Course Objective: Provide Conceptual insight about how database design and implementation takes place.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
					Internal Marks			External Marks		
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	T	CE	P	T	P	
3	0	2	-	4	20	20	20	60	30	150

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Introduction to System**System , Subsystem, Types of system (business system, informati system), Classification of system(DSS, MIS,TPS, OAS), Role of :System analyst, Role of :System designer, Role of : Programmer Analyst, Software Development Life cycle, Software Engineering brif	20	10
2	**Software Quality Assurance and Fact Gathering techniques:**Quality assurance and activities, Quality Control, Difference betwee QA and QC **Fact Gathering techniques System Analysis** Introduction, Importance, Activities	15	7
3	**Software Design and UML Diagrams:**Introduction, Importance, DFD, Data dictionary **UML:** Introduction, History and importance, UML diagrams	20	10
4	**Administration and Training:**User manual, Implementation Documentation, Operation plan and maintenance.	10	5
5	**Working with System Analysis Models:**Waterfall Model, Iterative Model, V-Model, Spiral Model, Big Ban Model, Prototyping Model	15	7
6	**Coding approaches and Documentation :**Programming Practice, Top-Down and Bottom-Up, Structured Programming, Information Hiding, Programming Style, Internal Documentation, Code Inspections or Reviews.	10	5
7	**Software Testing Types & Techniques**Static and dynamic, Black box, White box, Grey box, Non functional. **Software Testing Strategies.**	10	4

Reference Books

1.	**Database System Concepts** By Silberschatz, Korth, Sudarshan | McGraw Hill Publication | 4th Edition
2.	**Software Engineering** By Ian Sommerville | Pearson Education Ltd. | Ninth Edition
3.	**An Introduction to Database Systems** By C. J. Date, A. Kannan, S. Swamynathan | Pearson Education | 8th Edition
4.	**Software Engineering : A Practitioner's Approach** By Pressman R.S | TMH
5.	**Database Systems: Concepts, Design and Applications** By S. K. Singh | Pearson Education
6.	**Analysis & Design of Information System** By James A. Senn | Second Edition
7.	**UML –A Beginner's Guide** By Jasson Roff | TMH | Twelfth Edition
8.	**SQL, PL/SQL – The Programming Language** By Ivan Bayross | BPB Publications
9.	**Database Management Systems** By Raghu Ramakrishnan, Johannes Gehrke | McGraw Hill Publication

Course Outcome

After Learning the Course the students shall be able to:
1.Explain the fundamental concepts of systems and their role in software development, including the system development life cycle. 2.Analyze and apply fact-gathering techniques and system analysis models to ensure software quality during the development process. 3.Design software systems using UML diagrams and organize effective administration and training for software deployment. 4.Implement coding standards and document software systems, while evaluating different software testing techniques to ensure functionality and reliability.

List of Practical

1.	**To Identify Project scope, Objectives and Infrastructure**
2.	**To Develop SRS document**
3.	**To Develop Data Dictionary and Use case Diagram**
4.	**To Develop Activity diagram and Class diagram**
5.	**To Develop Sequence diagrams and Collaboration Diagram**
6.	**DFDS creation**
7.	**UML Study**
8.	**Cost estimation model study**
9.	**To Add interface to class diagram**
10.	**Implement the design by coding**
11.	**To Prepare test plan**
12.	**Creation of test cases**
13.	**To perform validation testing**
14.	**Software Quality Metrices**

Course: IMCA (A.Y.-5) **Semester:** 2

Prerequisite:

Course Objective: Communication confidence laced with knowledge of English grammar is essential for all engineers.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
					Internal Marks			External Marks		
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/	Seminar Hrs/	Credit	T	CE	P	T	P	
2	2	-	-	4	-	100	-	-	-	100

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Body Language** The students will be shown the positive and negative body languages and will be taught how to project a better body language in personal and professional life with help of interactive videos, exercises and Activities.	3	2
2	**Goal Setting** Goal setting involves helping the students to make clear cut achievable goals. This session will teach the students, how to plan, execute and realise their goals	3	2
3	**Habit formation** The students will be given a detailed study about the formation of habits and its effects. They will also be taught different techniques to cultivate good habits that will help them to refine themselves.	5	2
4	**Impression Management** Will lead to understanding of how controlling self-presentation and managing behavior in certain situations, to take control over the impression left on others will help maintain a good reputation, and allow others to see the value one brings to the table	5	2
5	**Simple and effective communication** This session involves self awareness, behaviours, communication, listening, empathy and tips and techniques for understanding others better. It will help the students to have a better relation with people both personally and professionally.	3	2
6	**Team building** This session is dedicated to make the students understand the importance of Team work and how to work as a team. It involves activities that will help the students break the ice amongst them and to work productively as a team.	5	2
7	**Tenses**	5	2
8	**Classification of sentences**	5	2
9	**Adjectives and Adverbs**	5	2
10	**Forms and Speech and Voice**	5	2
11	**Punctuations**	3	2
12	**Email and letter writing**	5	2
13	**Report and Proposal writing**	3	2
14	**Listening to workplace communication**	3	2
15	**Speaking - Participating in discussions**	5	2
16	**Reading Introduction**	5	1
17	**Note Writing**	3	1

18	**Memo Writing**	**3**	**1**
19	**Listening Skills – Questions**	**5**	**2**
20	**Listening Skills worksheet**	**2**	**1**
21	**Listening Skills**	**5**	**2**
22	**Listening Skills Activity**	**2**	**1**
23	**Speaking Skill Building Introduction**	**4**	**2**
24	**Speaking-Skill Building IS 16-04**	**4**	**2**
25	**Speaking Skill Building Activity**	**4**	**2**

Reference Books

1.	**Booklets on English Grammar and Communication confidence**
2.	**Word Power Made Easy** By Norman Lewis | Goyal Publishers
3.	**Understanding and Using English Grammar** By Betty Azar & Stacy Hagen | Pearson Education
4.	**Made to Stick: Why some ideas take hold and others come unstuck** By Chip and Dan Heath | RHUK Publication

Course Outcome

After Learning the Course the students shall be able to:
1. Come to terms with basics of English grammar 2. Display high level of communication confidence