माँ विंध्यवासिनी विश्वविद्यालय, मीरजापुर

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Year wise Structure of B.Sc. (Computer Application)(According to NEP)

Year	Sem.	Paper Title	Theory/Practical	Credits
1	I	Computer Fundamentals and Internet	Theory	4
	I	PC Software (Laboratory Assignments)	Practical	2
	II	Data Communication	Theory	4
	II	Programming in C(Laboratory Assignments)	Practical	2
2	III	System Analysis and Development	Theory	4
	III	Object Oriented Programming with C++	Practical	2
	IV	DBMS and RDBMS	Theory	4
	IV	SQL,PL/SQL	Practical	2
3	V	Java Programming	Theory	4
	V	Laboratory Assignments I (Basic JAVA programming)	Practical	3
	V	Laboratory Assignments II (Advanced Features of JAVA programming)	Practical	3
	V	Minor Project	Project Report	3
	VI	Advanced Topics in Computer	Theory	4
	VI	Major Project (Using tools such as Java, Visual Basic and Oracle)	Project Report	3
	VI	Web Technology (Laboratory Assignments)	Practical	3
	VI	Computer Graphics and Multimedia (Laboratory Assignments)	Practical	3

Year wise Structure of B.Sc. for Subject Computer Application							
Type of Award	**Subject: Computer Application**						**Total Credits of the Subject**
	Year	**Sem.**	**Paper 1 Theory**	**Credit**	**Paper 2 Practical**	**Credit**	
Certificate in Computer	1	I	Computer Fundamentals and Internet	4	PC Software (Laboratory Assignments)	2	6
		II	Data Communication	4	Programming in C	2	6
Diploma in Computer	2	III	System Analysis and Development	4	Object Oriented Programming with C++	2	6
		IV	DBMS and RDBMS	4	SQL,PL/SQL	2	6
Bachelor of Science	3	V	Java Programming	4	Laboratory Assignments I (Basic JAVA programming)	3	13
			Laboratory Assignments II (Advanced Features of JAVA programming)	3	Minor Project	3	
		VI	Advanced Topics in Computer	4	Major Project (Using tools such as Java, Visual Basic and Oracle)	3	13
			Web Technology (Laboratory Assignments)	3	Computer Graphics and Multimedia (Laboratory Assignments)	3	

Practical Evaluation& Assessment			
Internal Assessment	**Marks**	**External Assessment**	**Marks**
Class Interaction	05	Vive Voce	25
Quiz 1	10	Execution/Demonstration	20
Quiz 2	10	Write up/Theory Work	20
		Practical Record File	10
	25		**75**

Programme/Class: **Certificate**	Year: **First**	Semester: **First**
Subject: **Computer Application**	Subject Title: **Computer Fundamentals and Internet**	
Credit: **4**	**Core Compulsory**	
Max. Marks: **25+75**		

Total No. of Lecture-Tutorial-Practical-(in hours per week): **4-0-0**

Unit	Topic	No. of Lecture
I	**Introduction to Computer and Problem Solving**-Information and Data Hardware-CPU, Primary and Secondary storage, I/O devices, Bus structure, **Computer Peripherals-** VDU, Keyboard, Mouse, Printer. Software and Types of Software, Programming Languages-Machine Language ,Assembly Language, High Level Language, Object Oriented Language. **Problem Solving-** Algorithm, Flowcharts, Decision tables & Pseudocodes.	**08**
II	**Number systems and Codes-**Number representation-weighted codes ,Non-weighted codes, Position, Binary, Octal, Hexadecimal, Binary Coded Decimal(BCD),Conversion of bases, Complement notations, Binary Arithmetic ,**Binary Codes-** Gray, Alphanumeric, ASCII.	**06**
III	**Microprocessor-** Architecture of 8-bit and 16-bit microprocessor, Machine language instructions, Addressing Modes, Instruction formats, Instruction sets, Instruction cycle, Clock cycles, Timing diagrams, Interrupts, Bus standards and Interfacing concepts.	**06**
IV	**Boolean algebra-** Fundamentals of Boolean algebra, Switches and inverters, Functionally Complete Gates (AND, OR, NOT), NAND, NOR, switching function and Boolean function, De Morgan's Theorem, Application of Boolean Algebra, Algebraic & K-map .	**08**
V	**Internet-** Introduction to networks and internet, history, working of Internet, Modes of connecting to internet, ISPs, Internet address, standard address, domain name, Modems .	**06**
VI	**World Wide Web-** Introduction, Miscellaneous Web Browsers details, searching the www- Directories search engines and meta search engines, search fundamentals, search engines, working of the search engines, Telnet and FTP.	**06**

Suggested Readings:

1. Computer Organization & Architecture- Designing & Performance, William Stallings, Prentice Hall of India.
2. Alfred Glkossbrenner-Internet & Computing , MGH,1996
3. Microprocessor: Architecture , Programming and Applications with the 8085, R.S.Gaonkar, PRI

Programme /Class: **Certificate**	Year: **First**	Semester: **First**
Subject: **Computer Application**		
Credit: **2**	Subject Title: PC Software (Laboratory Assignments)	
Max. Marks: **25+75**		
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-2**		

Unit	Topic	No. of Lectures/ Laboratory Assignment class
I	**MS Word:** Introduction, Menus, Toolbars, Creating, Saving, Inserting files, Formatting, Editing Text, Find and Replace, Header and Footer, Working with text boxes, columns, pictures, charts and graph, Tables, Equations, WordArt, Printing, Mail Merge. Import and Export files, spelling and grammar checking, Thesaurus, Creating Bookmark and Hyperlinks.	**10**
II	**MS PowerPoint:** Introduction, Creation of Presentation, Built-in-wizard, Working with Text, list, color and transitions. Header and Footer, Drawing tools, Animation and sound, Importing Objects from other applications.	**10**
III	**MS Excel:** Introduction, An overview of worksheet, Creating worksheet and workbook, Opening and saving Workbook and exiting Excel, Formatting, Protecting Cells, Producing Charts, Macros, Database, Using Tables, Using files with other Programme. Goal seek, scenario, Pivot table, different functions (Antiemetic / String / Date and Time function etc.)	**10**
IV	**MS Access:** Introduction, Understanding Databases, Create Tables and Quires, Forms, Finding information in a Database, Create Report, Adding Graph.	**10**

Programme /Class: **Certificate**	Year: **First**	Semester: **Second**
Subject: **Computer Application**	Subject Title: **Data Communication**	
Credit: **4**	**Core Compulsory**	
Max. Marks: **25+75**		

Total No. of Lecture-Tutorial-Practical-(in hours per week): **4-0-0**

Unit	Topic	No. of Lecture
I	Introduction, Data communications ,Components, Data representation (ASCII,ISO etc.), Direction of data flow (Simplex, Half duplex, Full duplex), Networks- Distributed Processing, Network Criteria, Physical structure(type of connection ,topology), Types of networks.	**10**
II	Analog & Digital Transmission, Modulation, Need for Modulation, Modulation Techniques. Transmission media –Twisted pair cable, coaxial cable, fiber optic cable, Microwave and Satellite Communication. Switching and Switching Techniques.	**10**
III	Reference Models- OSI and TCP/IP Reference Models. Network Devices- Repeaters, Hubs, Bridges, Switches, Router, Gateway. Multiplexing- TDM,FDM, CDM.	**10**
IV	Modern Topics-ISDN services & ATM, Wireless LAN-IEE 802.11, Bluetooth, Cellular Mobile Systems, Difference between wireless and fixed telephone networks.	**10**

Suggested Readings:

1. B. A. Forouzan-Data Communications and networking (3rdEd.)- TMH
2. W. Stallings- Data Computer Communications (5thEd.)-PHI
3. Wireless Communications: Theodore S. Rappaport, Pearsons

Programme /Class: **Certificate**	Year: **First**	Semester: **Second**
Subject: **Computer Application**		
Credit: **2**	Subject Title: **Programming in C** (Laboratory Assignments)	
Max. Marks: **25+75**		
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-2**		

Unit	Topic	No. of Lecture
I	**Introduction to C:** History of C, Structure of a C program. The C character set, Constants, Variables and keywords, Data type. Types of constants and variables. Type declaration and arithmetic instructions, Integer and float conversions. Type conversion in assignment, Operators in C, Hierarchy of operators, control instructions, Input-Output statements in C (Formatted and Unformatted)	**10**
II	**Control Structures:** Decision control structures, Logical operators, conditional operator and relational operators. Loop control structures – while, do-while, for loop, Break statement, Continue statement, switch-case control structure, goto statement Bitwise operators Bitwise AND, OR, exclusive OR, compliment, right shift and left shift operators	**10**
III	**Arrays:** One dimensional and multidimensional array, declaration, initialization and array Manipulations, sorting (Bubble sort) Strings – Basic Concepts, Library Functions. **Functions:** Definition, function definition and prototyping, types of functions, type of arguments, Recursion, passing arrays to functions, storage class in C-automatic, register, external and static variables.	**10**
IV	**Pointers:** Definition, notation, pointers and arrays, array of pointers and functions – call by value and Call by reference, Pointers to pointers. Definition, declaration, accessing structure elements, Array of structure in a structure, Pointers and structures, Unions – definition, declaration, accessing union elements, typedef, Enum Bit fields. Types of C preprocessor directives, Macros, data file handling, file opening modes, Text and Binary files.	**10**

Suggested Readings:

1. Programming in C : Schaum Series
2. Let Us C : Yashwant Kanetkar (BPB)
3. Data Structure Using C : A.M, LPE
4. Data Structure and Program by Jr.Seymour Lipschultz,Schaum's outline ,TMH

Programme /Class: **Diploma**	Year: **Second**	Semester: **Third**
Subject: **Computer Application**	Subject Title: **System Analysis and Development**	
Credit: **4**	**Core Compulsory**	
Max. Marks: **25+75**		

Total No. of Lecture-Tutorial-Practical-(in hours per week): **4-0-0**

Unit	Topic	No. of Lecture
I	**System Concepts and Information System Environment:** Introduction, The system Concept, Definition, Characteristics of system, Types of system- Physical or Abstract System, Elements of a system, System Models. **System Development Life Cycle:** Introduction, SDLC- Recognition of need, Feasibility Study, Analysis , Design, Implementation, Post –Implementation and Maintenance. **The Role of Analyst:** Introduction, Definition, Historical Perspective, Academic and Personal Qualification, Multifaceted role of analyst - change Agent, Investigator, Monitor, Architect, and Psychologist.	**15**
II	**System Planning and Initial Investigation:** Introduction, Base for planning, Dimension of Planning, Initial Investigation, Need of Investigation, determination of feasibility. **Information Gathering :** Introduction ,What kind of information Needed ,Where does information originate ?Tools for information gathering **Tools for Structured Analysis:** DFD, Data Dictionary, Decision Tree and structured English, Decision Tables Pros and cons of each tool.	**15**
III	**Process of Design:** Logical and Physical Design, Design Methodologies, Form – Driven **Methodology:** The IPO charts, Forms, Classification of Forms, Requirements of from Design .Types of Forms. **System Testing & Quality Assurance:** What is Testing? Why Testing? ,Nature of Test Data **The Test Plan :**Activity, Network for system testing , System testing, Unit ,Integration , Alpha , Beta , White-box and Black Box testing . Levels of Quality Assurance, Role of Data Auditor, Verification and Validation.	**15**
IV	**Security, Disaster / Recovery and Ethics in System Development:** Introduction, **System Security:** Definitions, Threats to system Security, Control Measures, Disaster/Recovery. Ethics codes and standard of Behavior.	**15**

Suggested Readings:

1. System Analysis and Design by Elias M. Awad.
2. Software Engineering by Pressmen.

Programme /Class: **Diploma**	Year: **Second**	Semester:**Third**
Subject: **Computer Application**		
Credit: **2**	Subject Title: **Object Oriented Programming with C++** (Laboratory Assignments)	
Max. Marks: **25+75**		
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-2**		

Unit	Topic	No. of Lecture
I	**Principals of OOP:** Basic Concept of OOP, Benefits of OOP, Object oriented VS Procedural and structured programming, header files, I/O statements, **Data types**: User defined, Basic, Derived Data-types. Access specifier, this operator, Member variable, Member function, Scope resolution operator.	**10**
II	Control statements, Looping, Array, Array Declaration, Array Initialization, Multidimensional Array.	**10**
III	**Functions in C++:** Call by value, Call by reference, Inline function, Friend function, Function Overloading, Virtual function. Class and object, Constructors and **Destructors:** Introduction, Multiple Constructors in a class, Operator Overloading, **Inheritance:** Introduction, types of Inheritance, Abstract class, Virtual base class, Polymorphism, Data Encapsulation.	**10**
IV	**Working with Files:** Introduction, Classes for File Stream Operations, Opening and Closing a File, Detecting End-of File.	**10**

Suggested Readings:

1. Let Us C++ by Yashwant Kanitkar, BPB
2. Object Oriented Programming , Robert Lafore

Programme /Class: **Diploma**	Year: **Second**	Semester: **Fourth**
Subject: **Computer Application**	Subject Title: **DBMS and RDBMS**	
Credit: **4**	**Core Compulsory**	
Max. Marks: **25+75**	Min. Passing Marks:	
Total No. of Lecture-Tutorial-Practical-(in hours per week): **4-0-0**		

Unit	Topic	No. of Lecture
I	**Introduction to databases:** Database and its Hierarchies, History of Databases, Types of DBMS **Data Environment:** Database and DBMS software, Database Architecture, Three layered Architectural /O Functions, Characteristics of database approach. **Relational Model:** Logic Data models, Relational Data Model, Querying Relational Data Model, Relational Algebra, and Relational Calculus.	**15**
II	**SQL:**SQL Language, SQL Database object, SQL Data Types, DDL, DML, and DCL commands, Deleting data, Retrieving Data, Insertion of Data, Updating Data , Integrity constraint ,Keys, Creating and altering tables ,Views, Sequence, Index.	**15**
III	E-R Modeling, Normalization-Database Design, Entity ,Attributes, and Entity sets, Relationship and Relation sets, ER Diagram, Features of ER Diagram, Conceptual Database Design with ER model, Anomalies in Database, Redundancy, Inconsistency, Update Anomalies, Good Database Designing. **Database Security:** Access Control, Discretionary Access Control, Mandatory Access Control, Additional Issues to Security. **File Organization:** Sequential, Direct, Index Sequential Files Hashing , B-Trees.	**15**
IV	Data warehousing Definition, usage, trends. DBMS vs Data Warehouse ,Data marts , Metadata Multidimensional Data Mode , Data Cubes, Schemas for Multidimensional Database- Star, snowflakes, and fact constellation, Data warehouse process & architecture, OLTP vs OLAP, ROLAP vs MOLAP, types of OLAP, 3-tier Data warehouse architecture, Distributed and Virtual Data warehouses, Data warehouse manager, Data warehouse implementation. Data mining- Definition & Task, KDD vs Data mining, Data mining techniques-Association rules, Clustering techniques, Decision tree, Data mining tools and applications, Data mining query languages.	**15**

Suggested Readings:

1. Database Systems and Concepts, Henry F. Korth
2. DBMS by Date
3. Database Management System by Bipin Desai

Programme /Class: **Diploma**	Year: **Second**	Semester:**Fourth**
Subject: **Computer Application**		
Credit: **2**	Subject Title: **SQL,PL/SQL Lab**	
Max. Marks: **25+75**		
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-2**		

Unit	Topic	No. of Lecture
I	1. Installing oracle. 2. Creating Entity-Relationship Diagram using case tools. 3. Writing SQL statements Using ORACLE /MYSQL: 4. Writing basic SQL SELECT statements.	**10**
II	1. Manipulating data. 2. Creating and managing tables. 3. Normalization in ORACLE. 4. Creating cursor in oracle and Creating procedure and functions in oracle.	**10**
III	1. Displaying data from multiple tables. 2. Aggregating data using group function. 3. Creating packages and triggers in oracle. 4. Restricting and sorting data.	**10**
IV	1. Write a Pl/SQL program using FOR loop to insert ten rows into a database table. 2. Given the table EMPLOYEE (Emp_No, Name, Salary, Designation, Dept_ID) write a cursor to select the five highest paid employees from the table. 3. Illustrate how you can embed PL/SQL in a high-level host language such as C/Java And demonstrates how a banking debit transaction might be done. 4. Given an integer i, write a PL/SQL procedure to insert the tuple (i, 'aaa') into a given relation	**10**

Programme /Class: **Bachelor of Science**	Year: **Third**	Semester: **Fifth**
Subject: **Computer Application**	Subject Title: **Java Programming**	
Credit: **4**	**Core Compulsory**	
Max. Marks: **25+75**		

Total No. of Lecture-Tutorial-Practical-(in hours per week): **4-0-0**

Unit	Topic	No. of Lecture
I	Java programming language overview, Referring to applets and applications, The first step in writing Java application, Basic Java application, Primary application components, Class code block, Data, Method code block, Using semicolon and braces, Compiling and running a program, Requirement for your source file, Compiling, Running the program	**10**
II	Java Primitive Types and Reference Types- Integral primitive types, Floating point primitive types, Textual primitive types- char, Logical primitive types- Boolean, Variable identifier conventions and rules, using variables in program, how primitives and constants are stored in memory, using a string class as a data type, using string and the new modifier, using string without the new modifier, Using string without using modifier, Value you can assign to string, How strings can be stored in memory , Using string reference variables, Using main method.	**10**
III	Abstract classes and Inheritance, Java2 Platform Class Library packages, Grouping classes in packages, Coding structure, Source file layout , Filenames, Java Methods and Object Interaction, Java Methods, Declaring Methods, Invoking Methods, Types of method, Passing Arguments, Method Overloading , Arithmetic operators, Operators precedence, Increment and decrement operators, The if construct, The While loop, The for loop, while VS for, The do loop, The switch Construct, The break statement, The continue statement , Java keywords.	**10**
IV	Graphical user interface development, Java AWT Package Class Hierarchy, GUI Project, Frame, Adding a button, Creating panels and complex layout, ActiveX Technologies & Implementation, ActiveX-based architecture, ActiveX controls, ActiveX documents, ActiveX code components, Implementing Client-Side Solutions, Introduction to scripting, Client-side scripting, Implementing ActiveX controls, Implementing Server-side solutions, Introducing Server-side scripting, Authoring active server pages(ASP), Reading a hypertext transfer protocol(HTTP)request, Creating HTTP response, Saving user information, User ActiveX server components.	**10**

Suggested Readings:

1. JAVA :The Complete Reference, Herbert Schildt, TMH

Programme /Class: **Bachelor of Science**	Year: **Third**	Semester: **Fifth**
Subject: **Computer Application**		
Credit: **3**	Subject Title: Laboratory Assignments (Basic Features of Java Programming)	
Max. Marks: **25+75**		
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-3**		

Unit	**Topic**	**No. of Lecture**
I	1. Write a java program to find the Fibonacci series using recursive and non recursive functions. 2. Write a java program to multiply two given matrices. 3. Write a java program that reads a line of integers and displays each integers and the sum of all integers use String. 4. Write a java program that checks whether a given string is palindrome or not	**20**
II	1. Write an applet program that displays a simple message. 2. Write a Java program compute factorial value using Applet. 3. Write a java program that works as a simple calculator. Use a Grid Layout to arrange Buttons for digits and for the + - * % operations. Add a text field to display the result. 4. Write a Java program for display the exception in a message dialog box	**20**

Programme /Class: **Bachelor of Science**	Year: **Third**	Semester: **Fifth**
Subject: **Computer Application**		
Credit: **3**	Subject Title: Laboratory Assignments (Advanced Features of Java Programming)	
Max. Marks: **25+75**		
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-3**		

Unit	Topic	No. of Lecture
III	1. Write a Java program that implements a multi-thread application that has three threads. 2. Write a java program that connects to a database using JDBC. 3. Write a java program to connect to a database using JDBC and insert values into it. 4. Write a java program to connect to a database using JDBC and delete values from it.	**20**
IV	1. Write a java program to simulate a traffic light. 2. Write a java program to display the table using labels in Grid layout. 3. Write a java program for handling mouse events. 4. Write a Java program loads phone no, name from a text file using hash table.	**20**

Programme /Class: **Bachelor of Science**	Year: **Third**	Semester: **Six**
Subject: **Computer Application**	Subject Title: **Advanced Topics in Computer**	
Credit: **4**	**Core Compulsory**	
Max. Marks: **25+75**		

Total No. of Lecture-Tutorial-Practical-(in hours per week): **4-0-0**

Unit	Topic	No. of Lecture
I	Computer Graphics- Introduction, Co-ordinate system, Information handling software, Graphics software, Area of application, translation, rotation, scaling, matrix representation. Homogenous co-ordinate system, composite transformation, inverse transformation, computer art, animation, morphing, projection and clipping, 2D & 3D transformation, lines, curves and their representation	**15**
II	Basics of multimedia technology, computers, communication & entertainment, multimedia and introduction, frame work for multimedia systems, multimedia devices like CD- Audio, CDROM, CD-I, Presentation devices and the user interface, multimedia presentation and authoring, professional development tools, LANs and multimedia, internet , WWW and multimedia distribution network- ATM and ADSN, Multimedia servers and databases, vector graphics, video on demand	**15**
III	Artificial Intelligence- Introduction to AI, Knowledge base system, Properties of AI, Software of AI, Organization working for AI, Fuzzy logic base machines, Work of cell and their classification. Data Encryption- Coding and Decoding techniques, First stage and second stage decoding, standard for data encryption. Image Processing- Introduction, Digital Image Processing, Various Phases of Image Processing.	**15**
IV	Operating System- Introduction, OS concepts, Types of OS, OS Structure, System calls and Types, Processes- Introduction to process, Inter-process Communication, Process Scheduling, Memory Management- Introduction, Swapping, Contiguous Memory Allocation, Paging, Segmentation, Virtual Memory Management- Demand Paging, Page Replacement, Deadlock-Prevention, Avoidance, Detection, Recovery, Algorithms	**15**

Suggested Readings:

1. Operating System Principles , Arbraham Silberschatz & Peter Baer Galvin
2. Digital Image Processing & Analysis, B. Chandra, D. Dutta Majumdar

Year: **Third**	Semester :**Six**
Subject Title: **Web Technology**(Laboratory Assignments)	

Topic	**No. of Lecture**
1. Write HTML/Java scripts to display your CV in navigator, your Institute website, Department Website and Tutorial website for specific subject 2. Design HTML form for keeping student record and validate it using Java script. 3. Write an HTML program to design an entry form of student details and send it to store at database server like SQL, Oracle or MS Access. 4. Write programs using Java script for Web Page to display browsers information.	**10**
1. Write a Java applet to display the Application Program screen i.e. calculator and other. 2. Writing program in XML for creation of DTD, which specifies set of rules. Create a style sheet in CSS/ XSL & display the document in internet explorer. 3. Using ASP for server side programming, ASP for user name and password and to retrieve & match the value. It display success and failure messages. ASP for creating text file local drive, ASP for keeping the student record in database. 4. Write an HTML page that contains a selection box with a list of 5 countries. When the user selects a country, its capital should be printed next in the list. Add CSS to customize the properties of the font of the capital (color, bold and font size).	**10**
1. Design the following static web pages required for an online book store web site. 1) HOME PAGE: The static home page must contain three frames. 2) LOGIN PAGE 3) CATOLOGUE PAGE: The catalogue page should contain the details of all the books available in the web site in a table. 4) REGISTRATION PAGE. 2. Develop and demonstrate the usage of inline, internal and external style sheet using CSS.	**10**
1. Write an HTML page including any required JavaScript that takes a number from text field in the range of 0 to 999 and shows it in words. It should not accept four and above digits, alphabets and special characters. 2. Create an XML document that contains 10 users information. Write a Java Program, which takes User Id as input and returns the user details by taking the user information from XML document using DOM parser or SAX parser.	**10**

Year: **Third**	Semester :**Six**
Subject Title: Computer Graphics and Multimedia (Laboratory Assignments)	
Credit: **3**	
Max. Marks: **25+75**	
Total No. of Lecture-Tutorial-Practical-(in hours per week): **0-0-3**	

LIST OF EXPERIMENTS :

TO DEVELOP JAVA/C PROGRAMS USING FOLLOWING CONCEPTS

1. To implement Line, Circle and ellipse Attributes.

2. To implement line drawing algorithms DDA line algorithm, Bresenham's line algorithm

3. To perform 2D and 3D transformations

4. To perform animation using any Animation software (Create Frame by Frame Animations using multimedia authoring tools)

5. To perform basic operations on image using any image editing software

6. To develop a presentation for a product using techniques like Guide Layer, masking and onion Skin using authoring tools.

7. To create a Jpeg image that demonstrates the various features of an image editing tool.