SOPHIA GIRLS' COLLEGE(AUTONOMOUS), AJMER

Lesson Plan

Name : Mrs. Kiran Bhagnani

Department: Computer Science

SOPHI.... GIRL'S COLLEGE (*AUTONOMOUS*), AJMER
B.C.A./ IMSC (SEMESTER I) 2020-21

MULTIMEDIA BASICS

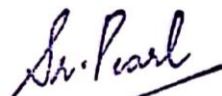Max. Marks :100 (70Ext; 30 Int)　　Min. Marks: 40(28 Ext;12 Int)　　Credit: 03

COURSE PLAN

SEM I Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
SEPTEMBER	**UNIT I** Introduction to Multimedia Technology- Applications of Multimedia, advantages and disadvantages of Multimedia, media elements	Different formats of data representation and its requirement	PPT, E-content	Identify terminology associated with the concepts, techniques, and processes used throughout the multimedia environment.	*Knowledge Based* • Define multimedia • List application areas of MM	Knowledge--60 Understanding-30 Higher Order-10
	User Interface and its types, importance and its features, MM hardware and software requirements	Requirements of different hardware and applications needed to deal with multimedia data	Demonstration, PPT, E-content		*Understanding Based* Which interface is best suitable to take input from the user and why?	
OCTOBER	Images: rastor and vector images **UNIT II** Image compression: Lossy and Lossless Compression, advantages and disadvantages of image compression, audio synthesis, speech recognition	Comparison of different image types and compression techniques	E-content , PPT and lecture method	Compare different image types and compression	Give comparison between vector and Bitmap Images	

	and Speech Synthesis.					
NOVEMBER	Jpeg image compression, mpeg video compression. Developing Applications using multimedia, methodology and design, Various multimedia laws: Patent law, Trademark Law, Trade secret Law, and Copyright Law.	How to design a Multimedia application , Business and Ethical laws in society	PPT, Quiz, E-content	Study laws of multimedia and design environment	*Higher Order Thinking Skills Based* Can integration of different media elements can be accomplished in any computer? Justify	
DECEMBER	**UNIT III** Introduction to Flash: Tools of Flash (Pen, Pencil, Paint Bucket Tool, Eye Dropper, Text, 3D rotation etc),	Creating Animation using vector images	PPT, Practical, Videos , E-content	Design basic animations and gif images using flash		
	Drawing object in flash (line, curve, oval, Rectangle , Polystar tool) , stroke and fill, Layers and its types in flash, Key frames, symbols, Object based animation,	Importance of computers in developing animation and how to select particular tween from various options	PPT, Practical, Live Examples			
JANURARY	Motion tween, classic tween and shape tween, adding sound.	Creating professional animations	PPT, Practical, Live Examples			

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SOPHIA GIRL'S COLLEGE (*AUTONOMOUS*), AJMER
B.C.A/IMSC (SEMESTER III) 2020-21
BCA/IMSC – 301 Discrete Mathematics
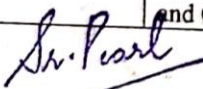
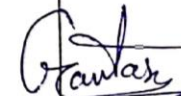Max. Marks :75 (50Ext; 25 Int)   Min. Marks: 30(20 Ext;10 Int)   Credit: 03

COURSE PLAN

SEM III Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	**Unit I** Sets: Elements of a set, methods of describing a set, types of sets, Operations on sets-- union, intersection and difference of sets, Associative Laws, Distributive laws	Membership of set and how to examine their relationships	PPT, Practical Implementation, Hands- on Exercise	Apply set operations to solve applied problems	*Knowledge Based* What is set? Define reflexive relation.	Knowledge-- 50 Understanding-- 35 Higher Order- 15
AUGUST	DeMorgan's laws(proofs) Venn Diagrams, Cartesian product of two sets. **Unit II** **Relation:** Basic definition of relation	Need of Relation and how to write the elements in relation from given equation	PPT, Practical Implementation, Hands- on Exercise	Able to recognize the membership of relationship set	*Understanding Based* Prove DeMorgans law of set theory.	
SEPTEMBER	Types of relations (reflexive, irreflexive, symmetric, A-symmetric, transitive, anti symmetric, equivalence), Binary relations, domain, range, inverse and composite.				Give the utility of quantifiers.	

OCTOBER	**Language of Logic:** Proposition, Compound Proposition, Conjunction, Disjunction, Implication, Converse, Inverse & Contra positive, Biconditional Statements, tautology, Contradiction & Contingency, Logical Equivalences, Universal and existential quantifiers .	Understanding algebra of logic , validity of compound statements	PPT, Practical Implementation, Hands- on Exercise		*Higher Order Thinking Skills Based* Is Adjacency matrix of all graphs symmetric? Justify by example
NOVEMBER	**Basic terminology of Graph Theory** –Vertices, Edges, Loop, Path, degree, Types- Undirected-Directed, weighted-Un-weighted, Simple-Multigraph, Labelled, Null, Di-graph, Subgraph, Connected-disconnected, Cyclic-Acyclic,	Understanding graph components and importance	PPT, Practical Implementation, Hands- on Exercise	Understand different graphs and matrix operations.	In a class, 60% students like math whereas 50% like science. What per cent of students like both math and science?
DECEMBER	Dijkstra's shortest path algorithm, Minimum Cost spanning Tree Algorithm (Prim's and Kruskal's). **UNIT III** **Matrices:** Definition of a matrix, types of matrices, Basic operations(Addition, subtraction and Multiplication), Transpose	Finding Minimum Cost path from several possible plan Representing data in two dimensions	PPT, Practical Implementation, Hands- on Exercise		
JANURARY	Determinant of a square Matrix, Minor and Co-factors , Adjoint of a square Matrix, Inverse of a matrix, Solution to System of Linear equations- Matrix Inverse method and Cramer's method.				

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COURSE_PLAN_2020-21_MRS_KIRAN_BHAGNANI

SOPHIA GIRL'S COLLEGE, AJMER (*AUTONOMOUS*)
B.C.A III (SEMESTER V) 2020-21
BCA – 505 Advance Database Management System

Max. Marks :75 (50Ext; 25 Int)   Min. Marks: 30(20 Ext;10 Int)   Credit: 03

COURSE PLAN

SEM V Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	**UNIT I** Query optimization & processing: algorithm for external sorting, select & join operation, project & set operations.	Optimization in day to day life and how it is applied to various operations in DBMS	PPT, Practice problems, E-content	Compare and Contrast between different types of databases. Optimize the operations	*Knowledge Based* What is query? Define interoperation in databases. BLOB and CLOB data types.	
AUGUST	Temporal and multimedia databases Parallel Databases : I/O Parallelism, Interquery Parallelism, Intraquery Parallelism.	How keeping time attribute is important in databases Importance of executing operations in parallel	PPT, Quiz, E-content, Blended learning	Implement basic operations of database language	*Understanding Based*	Knowledge--40 Understanding-40 Higher Order-20
SEPTEMBER	**UNIT II** Distributed Databases: Distributed Data Storage, Distributed Transactions, Commit protocol, Concurrency Control in Distributed Databases Introduction to PL/SQL and its advantages over SQL	How data can be processed from various sites in distributed databases. Problems that do exist in distributed architecture	PPT, Practical Implementation	Handle the events occurring on database	Explain the two phase commit protocol of databases. Give a brief explanation of	

2020-21

Month	Unit/Topic		Methodology		Higher Order Thinking Skills Based
	frames: creating vertical and horizontal frames, applying hyperlink targets to a frame. **Cascading style sheets:** inline, internal and external style sheets. **Java script** – introduction to scripting, JavaScript Keywords, variables, expression, data type, var.	of Webpage and how CSS can save time and effort in website development		site considering HTML and client side programming using JavaScript	*Higher Order Thinking Skills Based* Write a code to create a function to take input from user and find its factorial. Write a code to show use of different math methods.
SEPTEMBER-	Unit III Operators : Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment/ Decrement Operator, Conditional operator, Comma operator, % (Modulus), ++ (Increment), -- (Decrement), - (Unary Negation).	How JavaScript can be incorporated in HTML document. How to take and process input form then user	PPT, Practical Implementation	Design website using both the scripting languages	
OCTOBER	Control Structure: if-else, switch, Break, loop: while, do-while, for, for-in.				
NOVEMBER	Function: create, Core JavaScript (Properties and Methods of String,	Use of functions and various objects variable in JavaScript Comparison of code without array and with arrays	PPT, Practical Implementation	Implement the functions of Date, Math and String objects	
DECEMBER	Math and Date Object Java script arrays: introduction, array-declaring and allocating arrays.				

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SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)
M.SC Computer Science (FINAL) 2020-21
SEMESTER III (M.Sc. C. Sc. Final)
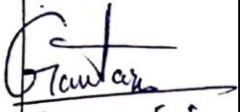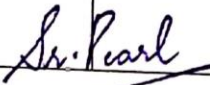### MSC – 304 Advance Database Management System

MAX MARKS: 100(70EXT: 30 INT)   MIN. MARKS: 40(28 EXT;12 INT)   Credit: 03

COURSE PLAN

SEM/ Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
SEM III JULY	**UNIT I** **Object Oriented concepts:** complex objects, object definition language, object query language	Concept of Objects and types of databases with reference to their relevance.	PPT, Lecture , Diagrams, e-content	Understand OODBMS concepts	_Knowledge Based_ Define time interval What is optimization?	Knowledge--25
	Distributed Databases: Distributed Data Storage, Distributed Transactions, Commit protocol, Concurrency Control in Distributed Databases.	Problems that do exist in distributed architecture		Compare between different database types	_Understanding Based_ What is the need of external sorting? Explain sort merge algorithm	Understanding-45
	Transaction management, and serializability, Recovery technique: log based recovery, Temporal database concept and multimedia database.	How keeping time attribute is important in databases.		Understand the utility of different databases and complexity		Higher Order-30
AUGUST	**Query optimization and processing,** algorithm for external sorting, select and join, Project and set operations	Optimization in day to day life and how it is applied to various operations in DBMS	Hands on Exercise, e-content		Explain how data constraints are necessary in databases.	

Month	Unit Content				
	UNIT II **Introduction to SQL**, E.F.Codd's rules, Components of SQL, Data Types, DDL & DML Commands (create, alter, insert, delete and update) & Constraints: Primary Key, Foreign Key, Check Constraints, Unique & Not Null.	Concept of Databases languages and its components, security aspects, Basic of SQL language,	Hands on Exercise and Practical Implementation, e-content	Execute various operations on database using SQL	*Higher Order Thinking Skills Based* Write a PL/SQl code for trigger creation.
SEPTEMBER	**SQL:** Searching, Matching & Basic Oracle Functions: String, numeric, Aggregate & Conversion Functions, Queries based on group by clause, Sub queries & joins.	Different types of queries on databases	Hands on Exercise and Practical Implementation, e-content	Execute various queries on database using SQL	Write a Pl/sql code to insert records in database
OCTOBER	**Unit III** **Introduction to PL/SQL** and its advantages over SQL, PL/SQL block structure , PL/SQL syntax, Data types, Control structures, conditional checking, Error handling in PL/SQL	Importance of PL/SQL and data types available in PL/SQL in respect to SQL	Hands on Exercise and Practical Implementation, blended learning	Handle error and various events on database	
NOVEMBER	Oracle transactions, creation and execution of procedures, creating function and packages.	Utility of packages and comparative analysis of functions and procedures	Practical Implementation	Compose packages in PL/SQL	
DECEMBER	Database Triggers: Introduction, Use & type of database Triggers, Triggers Vs. Declarative Integrity Constraints, BEFORE Vs. AFTER Trigger Combinations, Creating a Trigger, Dropping a Trigger.	Importance and various combinations of triggers in databases.	Practical Implementation, e-content	Able to handle database events occurring on system	

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SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)
V.C.A III (SEMESTER VI) 2020-21
VCA – 602 Multimedia Technology

Max. Marks :75 (50Ext; 25 Int)   **Min. Marks: 30(20 Ext;10 Int)**   **Credit: 03**

COURSE PLAN

SEM VI Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
FEBURARY	**Unit – I** Introduction to Multimedia , Advantages and Disadvantages of Multimedia	Effective Communication , its source and usage	PPT, E-content	Identify terminology associated with the concepts, techniques, and processes used throughout the multimedia environment	*Knowledge Based* Define multimedia Computer Write short note on video *Understanding Based*	Knowledge—40 Understanding-40
MARCH	Media elements, Application areas of Multimedia, System components, user interface and its types, importance and Features of user interface, MM hardware & software requirements.	Integrating various media elements for a project.	PPT , Quiz	Understand the multimedia system	Explain how user interface is important for any multimedia interface. Give differences	Higher Order-20

				between bitmap and vector images.
	Unit – II Images: Raster and Vector image			
APRIL	Compression: Lossy and Lossless Compression, advantages and disadvantages of compression, jpeg image compression Various multimedia laws: Patent law, Trademark Law, Trade secret Law, Copyright Law.	Utility of Compression and various standards, privacy aspects of project	PPT, Blended Learning	Study laws of multimedia and importance of compression technique	*Higher Order Thinking Skills Based* Write down the steps to create butterfly and apply guide layer.
	Introduction to Flash: Uses of flash, hardware requirements of flash, Tool Box and its components (Line tool, Pen, Pencil, Paint Bucket Tool, Ink bottle tool, Eye Dropper), Color effects (solid, linear gradients & Radial gradients) Text tool.	Utility of flash file, how to render simple components on stage.	PPT, Practical Implementation	Understand key concepts of Flash designing tool	Can integration of different media elements can be accomplished in any computer? Justify
MAY	**Unit – III** Flash: 3D rotation, Eraser tool, concept of frames, significance of frames, key frame, Drawing object in flash (line, curve, oval, Rectangle , Polystar tool) , Layers and its types in flash. Insert and rename layers, Envelope	Utility of layers	PPT, Practical Implementation	Design basic animation and gif images for publishing	
JUNE	**SUMMER HOLIDAYS**				
JULY	Object based animation (frame by frame animation, motion tween, classic tween and shape tween, animating text), adding,sound	Comparative analysis of tweens	Practical, PPT		

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SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)
M.SC Computer Science (PREV) 2020-21
SEMESTER II (M.Sc. C. Sc. Prev.)
MCS -204: Web Development

MAX MARKS: 100(70EXT; 30 INT)   MIN. MARKS: 40(28 EXT;12 INT)   Credit: 03

COURSE PLAN

SEM/ Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
MAY	**Unit – I** **PHP** — Introduction, Common Uses of PHP, Characteristics of PHP, PHP — Environment Setup (XAMPP),Installation on Windows, PHP — Syntax, Running PHP Script from Command Prompt PHP — Variable, Local Variables, Global Variables, Static Variables, Constants, Operator Types, Precedence of Operators	Server side Programming and dynamic WebPages	PPT, Lecture , e-content	To impart knowledge server side programming using PHP	_Knowledge Based_ What is dynamic webpage? What is precedence of operator? _Understanding Based_ What is nested list? Explain by an example.	Knowledge—25 Understanding-45 Higher Order-30
JUNE	**Unit – II** **PHP:** Decision Making: If...Else Statement, ElseIf Statement, Switch Statement, Loop Types:, while , do...while, for, for each, break, continue	Understanding different sections of Webpage and website development	Hands on Exercise and Practical Implementation, blended learning	To Develop the decision making statement logic under different concepts using XAMP server	Write an HTML code to divide the webpage into four vertical	

Month	Content		Teaching Learning Strategy		Course Outcome	Assignment
JULY	**Arrays :** Numeric Array, Associative Arrays, Multidimensional Arrays, Strings function, Web Concepts, GET and POST, File Inclusion, File & I/O **Unit – III** **PHP :** Functions, Cookies, Sessions, Sending, File Uploading, Error and Exception Handling, PHP	How JavaScript can be incorporated in HTML document. How to take and process input form then user Use of functions and various objects variable in JavaScript	Hands on Exercise and Practical Implementation, blended learning			sections. *Higher Order Thinking Skills Based* Write a code to create a function to take input from user and find its factorial. Write a code to show use of different math methods.
AUGUST	**PHP and MySQL:** Connecting to MySQL Database, Create MySQL Database Using PHP, Insert MySQLDatabase Using PHP, Delete Data to MySQL Database, Retrieving Data from MySQL Database	Comparison of code without array and with arrays	Hands on Exercise and Practical Implementation, blended learning	To gain ability to develop web applications database connectivity using MYSQL Database		

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