SOPHIA GIRLS' COLLEGE(AUTONOMOUS), AJMER

Lesson Plan

Name : Kiran Bhagnani

Department: Computer Science

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BCA Sem I 2017-18

Subject: Multimedia Basics – I

Month		Areas covered	Other Activities
July		Introduction to Multimedia technology. Multimedia in : • Computer • Communications • Entertainment. • Various media elements of multimedia. • Advantages of multimedia • Disadvantages of multimedia System components of multimedia. What is User Interface . Types of user interface: • Novice/expert interface. • Graphical interface.	Class discussion
August		Multimedia platform . • Multimedia hardware components. • Multimedia software components. • Multimedia software components continued • commercial tools and standard What is HTML? Various tags in HTML: • Paired tags • Empty tags Head and body tags. How to create HTML document. Steps to open HTML document in browser.	Assignments and class test
September		Various types of style tags. Headers in HTML. What is list in HTML?	Oral test

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BCA Sem III 2017-18

Subject: Discrete Mathematics

Month		Areas covered	Other Activities
July		**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, DeMorgan's laws.	Class Test
August		Venn Diagrams, ordered pairs, Cartesian product of two sets. **Relation:** Basic definition of relation and types of relations (reflexive, irreflexive, symmetric, A-symmetric, transitive, anti symmetric, equivalence), Binary relations, domain, range, inverse and composite.	Assignment
September		**Algebra of logic:** Propositions and Logic operations, truth tables, arguments and validity of arguments, propositions generated by a set, equivalence and implication laws of logic.Logical Connectives – Disjunction, Conjunction, Negation, Conditional Connectives, Quantifiers. **Matrix operations:** addition, subtraction, multiplication, inverse	Test
October		**Graph Theory:** Definition, Basic terminology, Types of graph (Simple, Multi, Pseudo, Finite & Infinite, Null, Complete, Cyclic & Acyclic, Weighted & Unweighted graph), Matrix representation of graph: Adjacency matrix, Incidence Matrix, shortest path algorithm : Dijkstra's Algorithm.	Test and Revision

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BCA Sem V 2017-18

Subject: Relational Database Systems

Month		Areas covered	Other Activities
July		Query optimization & processing: algorithm for external sorting, select & join operation, project & set operations, Heuristics in query optimization Temporal and multimedia databases.	Class Test
August		**Parallel Databases :** I/O Parallelism, Interquery Parallelism, Intraquery Parallelism. **Distributed Databases:** Distributed Data Storage, Distributed Transactions, Commit protocol, Concurrency Control in Distributed Databases.	Assignment
September		Introduction to Pl/sql, Advantages of PL/SQL over SQl. PL/Sql structure,Data types, taking input and output. Loops: • Loop • While • For If condition, If -else condition, goto statement. Switch case. Oracle transactions • Rollback • Savepoint • Commit • Autocommit PL/SQL functions, Error handling in PL/SQL,	Practicals

October		Package functions, package functions, package procedures, SQL Stored Procedures. & functions, creation and execution of procedures. Database Triggers: Introduction, Use & type of database Triggers, Triggers Vs. Declarative Integrity Constraints, BEFORE Vs. AFTER Trigger Combinations, Creating a Trigger, Dropping a Trigger.	Practicals Test and Revision

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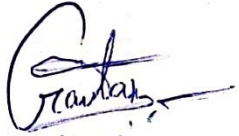## VCA Sem V 2017-18

Subject: Website Development

Month		Areas covered	Other Activities
July		Introduction of HTML: introduction, markup language, editing common tags, headers, text styles, working with links : creating a hyperlink, selecting hyperlink color, linking different sections of the webpage, formatting text, horizontal rules and more line breaks, unordered lists, nested and ordered lists. Working with images: inserting an image, adding border to image, aligning an image, using image as hyperlink.	Class Test Practicals
August		Working with tables: creating table, specifying caption to a table, setting width of table and table columns, setting cell spacing and padding ,spanning rows and columns, image maps. Basic HTML forms, working with frames: creating vertical and horizontal frames, applying hyperlink targets to a frame.	Assignment Practicals
September		Cascading style sheets: inline, internal and external style sheets. **Java script** – introduction to scripting, JavaScript Keywords, variables, expression, data type, var. Operators : Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment/ Decrement Operator, Conditional operator, Comma operator, % (Modulus), ++ (Increment), -- (Decrement), - (Unary Negation). Control Structure: if-else, switch, Break	Practicals
October		Loop: while, do-while, for, for-in. Function: create Core JavaScript (Properties and Methods of String, Math and Date Object) Java script arrays: introduction, array-declaring and allocating arrays.	Practicals and Revision

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M.Sc C.Sc. Sem III 2017-18

SUBJECT: Advanced Database Management Systems

onth		Areas covered	Other Activities
July		Distributed database design, architecture of distributed processing system Data placement - Data Replication - Data Fragmentation - Data Transparency Placement of DDBMS and other components, Distributed Transactions, Commit protocols: 2PC and 3PC, Concurrency Control and recovery. Ttransaction management: - Definition - States of transaction - ACID properties - Implementation of ACID properties Recovery and Need of recovery. Recovery techniques: - Log based Serialaizability - View Serialaizibility - Conflict Serialaizibility Temporal database concept, Multimedia database	Conducted test, class discussion
ugust		Introduction to query optimization. Query optimization and processing, Conversion of Sql query into relational algebra, algorithm for external sorting, select and join algorithm, project and set operations. **Object Oriented concepts :** Complex objects - structured	Assignments (RDBMS Terminology) and Practical

		• Unstructured Object definition language, object query language, primary, secondary, multi-level indexes. Introduction to SQL and Oracle. Various terms of RDBMS: • Tuple • Relation • Schema • Instance Dr. E.F.Codd's Rule, Difference Between DBMS vs RDBMS. Security and integrity of databases: • Locks and its type • Access control(Grant and revoke) DDL, DML commands • Create • Alter • Drop • Delete • Truncate • Insert • Update • Describe • Select	
September		Constraints: • Primary key • Foreign key • Check • Unique • Not null Searching and Matching • Like operators • Between • Not between • In operator • Alias • And /or Oracle functions: • String	Practical on PL/SQL

- Mathematical
- Date and time

Group by clause , Group By having clause.

Joins

- Inner join
- Outer join
- Cross join

Sub queries .

Introduction to Pl/sql, Advantages of Pl/SQL over SQl.

PL/Sql structure, data types, taking input and output.

Loops:

- Loop
- While
- For

If condition, If -else condition, goto statement.

Oracle transactions

- Rollback
- Savepoint
- Commit
- Autocommit

Cursors:

- Implicit cursor.
- Explicit cursor.

		PL/SQL functions, Error handling in PL/SQL, package functions, package functions, package procedures, , SQL Stored Procedures. & functions, creation and execution of procedures.	Assignment
October		Database Triggers: Introduction, Use & type of database Triggers, Triggers Vs. Declarative Integrity Constraints, BEFORE Vs. AFTER Trigger Combinations	
November		Creating a Trigger, Dropping a Trigger.	Practice Previous years paper

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BCA Sem II 2017-18

Subject: Multimedia Basics – II

Month		Areas covered	Other Activities
December		Images: Raster and Vector image, applications of image, image capture	--
January		Image compression: Lossy and Lossless Compression, advantages and disadvantages of image compression, audio compression and decompression, audio synthesis, speech recognition and Speech Synthesis. Digital video Interface, jpeg image compression. MIDI, video capturing, compression, , time-based media representation and delivery .	Group discussion
February		Mpeg video compression, Developing Applications using multimedia, methodology and design, Various multimedia laws: Patent law, Trademark Law, Trade secret Law, Copyright Law. Application of Multimedia: Intelligent Multimedia system, training and education, kiosks, multimedia in office and home. Introduction to Flash:	Class test
March		Tools of Flash (Pen, Pencil, Paint Bucket Tool, Eye Dropper, Text, 3D rotation etc), Drawing object in flash (line, curve, oval, Rectangle , Polystar tool) , Layers and its types in flash. Keyframes. Object based animation, motion tween , classic tween and shape tween.	Practicals Revision

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2017-18

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BCA Sem IV 2017-18

Subject: DBMS- II

Month		Areas covered	Other Activities
December		Transaction management: Concept, ACID Properties Schedules : Serial and non serial schedules,	--
January		Serializability, concurrency. Deadlock : handling , detection and prevention. Recovery techniques: log based recovery. What is RDBMS and its related terms. Dr. E.F.Codd's Rule for RDBMS. Introduction to SQL Components of SQL	Group discussion
February		. SQL * Plus Data types. Constraints: Primary key • Foreign key • Check • Unique • Not null DDL, DML commands • Create ,Alter, Drop ,Delete, Truncate, Insert, Update , Describe , Select Searching and Matching • Like operators, Between , Not between, In operator , Alias , And /or	Class test
March		Oracle functions: • String • Mathematical • Date and time Group by clause , Group By having clause.Joins and its type, Sub Queries	Practicals Revision

Sr. Nirmal

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VCA Sem VI 2017-18

Subject: Multimedia Technology

Month		Areas covered	Other Activities
December		Introduction to Multimedia , media elements, Application areas of Multimedia, Advantages and Disadvantages of Multimedia, System components	--
January		User interface and its types, importance and Features of user interface, MM hardware & software requirements. Images: Raster and Vector image, 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.	Test and assignment
February		**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. 3D rotation, Eraser tool, concept of frames, significance of frames, key frame, Drawing object in flash (line, curve, oval, Rectangle , Polystar tool)	Practicals
March		Flash: Layers and its types in flash. Insert and rename layers, Envelope, Object based animation (frame by frame animation, motion tween, classic tween and shape tween, animating text), adding sound.	Practicals and Revision

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M.Sc C.Sc. Sem IV 2017-18

Subject: Artificial Intelligence

Month		Areas covered	Other Activities
December		Definition of AI, Application of AI, knowledge-based systems, representation of knowledge organization and acquisition of knowledge.	Test
January		Syntax, semantics of propsitional logic, syntax and semantics of FOPL, conversion to clausal form, inference rule, resolution principles, non-deductive inference methods, representation using rules, truth maintenance system, predicate completion and circumscription, modal and temporal logics, fuzzy logic.	Assignments
February		Bayesian probabilistic inference, possible word representation, Dempster-Shafer Theory, Ad-Hoc methods, associative networks, frame networks, search problems, uniformed or blind search, searching and-or graph.	Assignment
March		Concept of learning: Inductive and deductive, Knowledge acquisition, rote learning, Components of Learning Model, Performance Measures, Types of Learning (Supervised, Unsupervised, Active & Reinforcement). Concept of expert system, need for an expert system, Characteristics & features of an expert system.	Internal Exams

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M.Sc C.Sc. Sem IV 2017-18

Subject: Web Technology

Month		Areas covered	Other Activities
December		**HTML :** Introduction, HTML Documents, Various tags in HTML: • Paired tags • Empty tags Head and body tags. Basic structure of an HTML document, Creating an HTML document.	Test
January		Various types of style tags. Headers in HTML. What is list in HTML? Types of List: • Ordered • Unordered • Definition Inserting Images in HTML documents. Various properties of <img> tag. What are links? What are hyperlinks? Types of links: • Internal linking • External linking • Properties of <a> tag.	Assignments
February		Inserting tables in the HTML document Various attributes of <table> tag . Merging rows and columns in table using rowspan and colspan attribute.	Assignment

		• Image Map • Creating Frames in the HTML document. Attributes of \<frame\> and \<frameset \> tags.	
March		• Concept of Inline Frame. Creating style sheets to format the look and feel of the pages. • Cascading style sheets and its types Form designing in HTML: Introduction, The FORM Elements, Form Controls, Named Input fields, The \<INPUT\> tag, Hidden, Text box, Text Area, Password, Button, Submit, Reset, Radio, Checkbox, Select, pull down .	Internal Exams Revision

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