MES Garware College of Commerce, Pune, India

(Autonomous)

Affiliated to

Savitribai Phule Pune University, Pune

AUTONOMY HANDBOOK

Choice Based Credit System - CBCS

(2021 Pattern)

With effect from Academic Year 2023-24

Degree Programme of

Bachelor of Business Administration – Computer Application (BBA-CA)

Course Contents

Course Contents

Course Code: B4-21/501	Subject / Course: Core Java	Marks: 100 Credits: 3

Prerequisite:

Student should know the basics of object-oriented programming.

Course Objectives:

1. To develop the understanding of java language fundamentals.
2. To develop the understanding of object-oriented programming concepts in Java.
3. To develop the understanding of inheritance, packages and collections in Java
4. To develop the understanding of File handling and Exception Handling in Java
5. To develop the understanding of Graphical User Interfaces using applets, awt and swing controls.

Course Outcome:

After completing the course, the student shall be able to

CO1: Understand java language fundamentals.

CO2: Understand object-oriented programming concepts in Java.

CO3: Understand inheritance, packages and collections in Java.

CO4: Understand exception handling and file handling.

CO5: Understand and create Graphical User Interfaces using applets, awt and swing controls.

Unit	Unit Title	Contents	No. of Lectures
I	Java Fundamentals	1.1 Introduction to Java. 1.2 Features of Java 1.3 Basics of Java language: - Data types, variable, expression, operators, constant. 1.4 Structure of Java Program. 1.5 Execution Process of java Program. 1.6 JDK Tools. 1.7 Command Line Arguments. 1.8 Array and String:	5

Unit	Unit Title	Contents	No. of Lectures
		1.8.1 Single Array & Multidimensional Array 1.8.2 String, String Buffer 1.9 Built In Packages and Classes: 1.9.1 java.util:- Scanner, Date, Math etc. 1.9.2 java.lang	
II	Classes, Objects and Methods	2.1 Class and Object 2.2 Object reference 2.3 Constructor: Constructor Overloading 2.4 Method: Method Overloading, Recursion, Passing and Returning object form Method 2.5 new operator, this and static keyword, finalize() method 2.6 Nested class, Inner class, and Anonymous inner class	6
III	Inheritance, Package and Collection	3.1 Overview of Inheritance 3.2 inheritance in constructor 3.3 Inheriting Data members and Methods, 3.4 Multilevel Inheritance – method overriding Handle multilevel constructors 3.5 Use of super and final keyword 3.6 Interface 3.7 Creation and Implementation of an interface, Interface reference 3.8 Interface inheritance 3.9 Dynamic method dispatch 3.10 Abstract class 3.11 Comparison between Abstract Class and interface 3.12 Access control 3.13 Packages 3.13.1 Packages Concept 3.13.2 Creating user defined packages 3.13.3 Java Built inpackages 3.13.4 Import statement, Static import 3.14 Collection 3.14.1 CollectionFramework. 3.14.2 Interfaces: Collection, List, Set 3.14.3 Navigation: Enumeration, Iterator, ListIterator 3.14.4 Classes: LinkedList, ArrayList, Vector, HashSet	10

Unit	Unit Title	Contents	No. of Lectures
IV	File and Exception Handling	4.1 Exception 4.1.1 Exception and Error 4.1.2 Use of try, catch, throw, throws and finally 4.1.3 Built in Exception 4.1.4 Custom exception 4.1.5 Throwable Class. File Handling 4.1.6 Overview of Different Stream (Byte Stream, Character stream) 4.1.7 Readers and Writers class 4.1.8 File Class 4.1.9 File Input Stream, File Output Stream 4.1.10 Input Stream Reader and Output Stream Writer class 4.1.11 FileReader and FileWriter class 4.1.12 Buffered Reader class.	10
V	Applet, AWT and Swing Programming	5.1 Introduction 5.2 Types of applet 5.3 Applet Lifecycle 5.3.1 Creatingapplet 5.3.2 Applet tag 5.4 AppletClasses 5.4.1 Color 5.4.2 Graphics 5.4.3 Font AWT 5.5 Components and container used inAWT 5.6 Layoutmanagers 5.7 Listeners and Adapterclasses 5.8 Event Delegationmodel Swing 5.9 Introduction to Swing Componentand Container Classes 5.10 Exploring Swing Controls- JLabel and Image Icon, JText Field, The Swing Buttons JButton, JToggle Button, JCheck Box, JRadio Button, JTabbed Pane, JScroll Pane, JList, JTable, JComboBox, Swing Menus, Dialogs, JFileOpen, JColorChooser.	16
Total No of Teaching Lectures			**48**
Total No of Lectures for Evaluation			**9**

Teaching Methodology:

Unit	Unit Title	Teaching methodology	Project (If any)	Outcome expected Conceptual understanding Knowledge / Skills / Attributes etc	Weightage of Marks (%)
I	Java Fundamentals	Lecture - Demonstration and problem-based learning	NA	• To develop disciplinary knowledge of Java	10%
II	Classes, Objects and Methods	Lecture - Demonstration and problem-based learning	NA	• To develop disciplinary knowledge and apply analytical, creative, problem-solving skills for problem solving	25%
III	Inheritance, Package and Collection	Lecture - Demonstration and problem-based learning	NA	• To develop disciplinary knowledge and apply analytical, creative, problem-solving skills for problem solving	25%
IV	File and Exception Handling	Lecture - Demonstration and problem-based learning	NA	• To develop disciplinary knowledge and apply analytical, creative, problem-solving skills for problem solving.	20%
V	Applet, AWT and Swing Programming	Lecture - Demonstration and problem-based learning		• To develop disciplinary knowledge and apply analytical, creative, problem-solving skills for problem solving.	20%

Evaluation Method:

Unit	Evaluation Method	Marks (100)			Project/Practical (If any) 2 Credit (Considered under B4-21/506)
		Formative Assessment		Summative Assessment	
		CCE I (20) Int.	CCE II (20) Exam	SEMESTER (60)	
I	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory
II	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory
III	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory
IV	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory

Suggested Readings:

Sr.No.	Title of the Book	Authors/s	Publication
1	The Complete Reference – JAVA	HerbertSchildt	
2	Programming with JAVA -	Balgurusamy	
3	Programming in Java	S. Malhotra, S. Chudhary, 2nd edition,	Oxford Univ. Press.

Course Code: B4-21/502	Subject / Course: Operating System	Marks: 100 Credits: 03

Course Objectives:

1. To know the services provided by Operating System
2. To know the scheduling concept
3. To understand design issues related to memory management and various related algorithms.
4. To understand design issues related to

Course Outcome:

After completing the course, the student shall be able to

CO1: Ability to visualize the different services of Operating System.

CO2: To understand and practical knowledge of different scheduling techniques.

CO3: Practical knowledge of memory and its internal Structure.

CO4: To understand the basic concept of File management and various related algorithms

Unit	Unit Title	Contents	No of Lectures
I	Basic Concept and Introduction to Data Structure	1.1 What is Operating System 1.2 Computer system architecture 1.3 Services provided by OS 1.4 Types of OS 1.5 Operating System Structure – - Simple structure - Layered approach	4
II	Linear data structures	2.1 Introduction to Arrays - array representation 2.2 Sorting algorithms with efficiency - Bubble sort, Insertion sort, Selection Sort, Merge sort. 2.3 Searching techniques –Linear Search, Binary search	9
III	Linked List	3.1 Introduction to Linked List 3.2 Implementation of Linked List – Static & Dynamic representation,	7

Unit	Unit Title	Contents	No of Lectures
		3.3 Types of Linked List - Singly Linked list(All type of operation) - Doubly Linked list (Create , Display) - Circularly Singly Linked list (Create, Display) - Circularly Doubly Linked list (Create, Display)	
IV	Stacks	4.1 Introduction 4.2 Representation- Static & Dynamic 4.3 Primitive Operations on stack 4.4 Application of Stack 4.5 Conversion of Infix, prefix, postfix , Evaluation of postfix and prefix	10
V	Queues	5.1 Introduction 5.2 Representation - Static & Dynamic 5.3 Primitive Operations on Queue 5.4 Circular queue, priority queue 5.5 Concept of doubly ended queue	10
VI	Trees & Graph	6.1 Concept & Terminologies 6.2 Binary tree, binary search tree 6.4 (Concept) Operations on BST – Create, Insert, Delete, 6.5 Tree Traversals (preorder, inorder, postorder) 6.6 Graph Concept & terminologies 6.7 Traversals – BFS and DFS	8
Total No of Lectures			**48**

Unit	Unit Title	Suggestive Teaching methodology	Practical	Outcome Expected		Weightage of Marks (%)
				Conceptual understanding Knowledge / Skills / Attributes etc.		
I	Basic Concept and Introduction to Data Structure	Lecture - Demonstration and Practical Implementation in Laboratory	Practical	To understand concepts of algorithm analysis and basic concepts of Data Structures.	critical thinking and problem-solving skills	10%
II	Linear data structures	Lecture - Demonstration and Practical Implementation in Laboratory	Practical	To understand different sorting and searching Technique.	Information Literacy, critical thinking, problem solving, analytical reasoning	15%
III	Linked List	Lecture - Demonstration and Practical Implementation in Laboratory	Practical	To understand basic concept of link list, its applications and types of link list.	Critical thinking, problem solving, analytical reasoning, Life long Learning, Application Skills	20%
IV	Stacks	Lecture - Demonstration and Practical Implementation in Laboratory	Practical	To understand basic concept of Stack, its applications and polish notation.	Critical thinking, problem solving, analytical reasoning, Life long Learning, Experimental Learning	20%
V	Queues	Lecture - Demonstration and Practical Implementation	Practical	To understand basic concept of	Critical thinking, Problem solving,	20%

Unit	Unit Title	Suggestive Teaching methodology	Practical	Outcome Expected		Weightage of Marks (%)
				Conceptual understanding Knowledge / Skills / Attributes etc.		
		in Laboratory		Queue, its applications and its types.	Analytical reasoning, Life long Learning, Experimental Learning	
VI	**I**ntroduction to Trees & Graph	Lecture - Demonstration	Problem Solving	To understand concept of tree and graph. its traversal techniques.	Critical thinking, problem solving, analytical reasoning, Life long Learning, Experimental Learning	15%

Evaluation Method:

Unit	Evaluation Method	Marks (100)			Project / Practical (If any)
		Formative Assessment		Summative Assessment	
		CCE I (20)	CCE II (20)	SEMESTER (60)	
I	Test and lab course work	MCQ	Assignment		Practical in Computer Laboratory
II	Assignment and Quiz	MCQ	Assignment		Practical in Computer Laboratory
III	Test and Lab course work	MCQ	Assignment		Practical in Computer Laboratory
IV	Test, Quiz or Lab course work.	MCQ	Assignment		Practical in Computer Laboratory
V	Assignment and Quiz	MCQ	Assignment		Practical in Computer Laboratory
VI	Assignment and Quiz	MCQ	Assignment		Problem Solving

Sr.	Title of the Book	Author/s	Publication	Place
1	Fundamentals of Data Structures	Horowitz Sohni	Universities Press	Hyderabad
2	Data Structures using C	Bandopadhyay&Dey	Pearson	New Delhi
3	Data Structures using C	Srivastava	BPB Publication	New Delhi

Suggested Web/E-Learning Resources:

Sr. No.	Topic of the course	Lectures (Available on Youtube / Swayam / MOOCS etc.)	Link	Journals / Articles / Case studies
1	Data Structures	Swayam	https://swayam.gov.in/explorer?searchText=data+structures	online course
2	Introduction to Data Structures	MOOC	https://www.edx.org/course/c-introduction-to-data-structures	online course
3	C Programming: Getting Started	edX	https://www.edx.org/course/c-programming-getting-started	online course

Course Code: B4-21/503	Subject / Course: Cyber Security	Marks: 100 Credits: 3

Course Objectives:

1. To understand the fundamentals of cyber security.
2. To understand different Cyber offenses and categories of Cybercrime
3. To understand various tools and methods used in cybercrime
4. To have an overview of the Cyber laws**,** Cybercrimes and Cyber security
5. To understand the concept of Cyber Forensics.
6. To understand different Cyber cases with examples.

Course Outcome:

After completing the Course, the student shall be able to:

CO1: Have a good understanding of Cyber Security.

CO2: Identify the different types of Cyber Crimes.

CO3: Identify attacks, security policies and understand various tools

CO4: Have a good understanding of Cyber laws

CO5: To develop Cyber forensics awareness.

CO6: To gain more knowledge about old and new cyber cases

Unit	Unit Title	Contents	No of Lectures
I	Introduction to Cyber Crime and Cyber Security	1.1 Introduction 1.2 Cybercrime: Definition and Origin of the Word 1.3 Cybercrime and Information Security 1.4 Who are Cybercriminals? 1.5 Classifications of Cybercrimes: E-Mail Spoofing, Spamming, Cyber defamation, Internet Time Theft, Salami Attack/Salami Technique, Data Diddling, Forgery, Web Jacking, Newsgroup, Spam/Crimes Emanating from Usenet Newsgroup, Industrial Spying/Industrial Espionage, Hacking, Online Frauds, Computer Sabotage, Email Bombing/Mail Bombs,	07

Unit	Unit Title	Contents	No of Lectures
		Computer Network Intrusions, Password Sniffing, Credit Card Frauds, Identity Theft 1.6 Definition of Cyber Security 1.7 Vulnerability, Threats and Harmful acts 1.8 CIA Triad 1.9 Cyber Security Policy and Domains of Cyber Security Policy	
II	Cyber offenses and Cyberstalking	2.1 Criminals Plan: Categories of Cybercrime Cyber Attacks: Reconnaissance, Passive Attack, Active Attacks, Scanning/Scrutinizing gathered Information, Attack (Gaining and Maintaining the System Access), Social Engineering, and Classification of Social Engineering. 2.2 Cyberstalking: Types of Stalkers, Cases Reported on Cyberstalking, Working of Stalking 2.3 Real-Life Incident of Cyber stalking 2.4 Cybercafe and Cybercrimes 2.5 Botnets: The Fuel for Cybercrime, Botnet, Attack Vector 2.6 Cybercrime: Mobile and Wireless Devices – Proliferation - Trends in Mobility 2.7 Credit Card Frauds in Mobile and Wireless Computing Era 2.8 Security Challenges Posed by Mobile Devices 2.9 Authentication Service Security 2.10 Attacks on Mobile/Cell Phones	10
III	Tools and Methods Used in Cybercrime	3.1 Introduction 3.2 Proxy Servers and Anonymizers 3.3 Phishing 3.4 Password Cracking 3.5 Keyloggers and Spywares 3.6 Virus and Worms 3.7 Trojan Horses and Backdoors 3.8 Steganography 3.9 DoS and DDoS Attacks 3.10 SQL Injection	05
IV	Cybercrimes and Cyber security: The	4.1 Introduction 4.2 Cybercrime and the Legal Landscape around	07

Unit	Unit Title	Contents	No of Lectures
	Legal Perspectives	the World 4.3 Why Do We Need Cyberlaws: The Indian Context 4.4 The Indian IT Act 4.5 Challenges to Indian Law and Cybercrime Scenario in India 4.6 Consequences of not Addressing the Weakness in Information Technology Act 4.7 Digital Signatures and the Indian IT Act 4.8 Amendments to the Indian IT Act 4.9 Cybercrime and Punishment 4.10 Cyberlaw, Technology and Students: Indian Scenario	
V	Cyber Forensics	5.1 Introduction 5.2 Historical background of Cyber forensics 5.3 Digital Forensics Science 5.4 The Need for Computer Forensics 5.5 Cyber Forensics and Digital evidence 5.6 Forensics Analysis of Email 5.7 Digital Forensics Lifecycle 5.8 Challenges in Computer Forensics	09
VI	Cybercrime: Illustrations, Examples and Mini-Cases	6.1 Real-Life Examples 6.2 Mini-Cases 6.3 Illustrations of Financial Frauds in Cyber Domain 6.4 Digital Signature-Related Crime Scenarios 6.5 Digital Forensics Case Illustrations 6.6 Online Scams	10
Total No of Teaching Lectures			**48**
Total No of Lectures for Evaluation			**9**

Unit	Unit Title	Teaching methodology	Project (If any)	Outcome expected Conceptual understanding, Knowledge / Skills / Attributes etc	Weightage of Marks (%)
I	Introduction to Cyber Crime and Cyber Security	Lecture		• Information/Digital Literacy • Professional Skills • Critical thinking • Moral and Ethical Awareness/Reasoning	10%
II	Cyber offenses and Cyberstalking	Lecture and Guest Lectures		• Problem Solving • Analytical Reasoning • Reflective Thinking • Application Skills • Employability	15%
III	Tools and Methods Used in Cybercrime	Lecture		• Problem Solving • Critical thinking • Reflective Thinking • Professional Skills • Application Skills	15%
IV	Cybercrimes and Cyber security: The Legal Perspectives	Lecture and Guest Lectures		• Critical thinking • Information/Digital Literacy • Professional Skills • Employability • Decision Making Skills	20%
V	Cyber Forensics	Lecture		• Critical thinking • Information/Digital Literacy • Professional Skills • Employability • Decision Making Skills	20%
VI	Cybercrime: Illustrations, Examples and Mini-Cases	Lecture and Case study		• Critical thinking • Information/Digital Literacy • Professional Skills • Employability • Decision Making Skills	20%

Evaluation Method:

Unit	Evaluation Method	Marks (100)			Project / Practical (If any) 1 Credit
		Formative Assessment		Summative Assessment	
		CCE I (20)	CCE II (20)	SEMESTER (60)	
I	MCQ	MCQ	MCQ/ Written Examination	MCQ/ Written Examination	Nil
II	MCQ	MCQ	MCQ/ Written Examination	MCQ/ Written Examination	Nil
III	MCQ	Assignment	MCQ/ Written Examination	MCQ/ Written Examination	Nil
IV	MCQ	Assignment	MCQ/ Written Examination	MCQ/ Written Examination	Nil
V	Case base learning	Cases and Assignment	MCQ/ Written Examination	MCQ/ Written Examination	Nil
VI	MCQ	Cases and Assignment	MCQ/ Written Examination	MCQ/ Written Examination	Nil

Suggested Readings:

Sr.	Title of the Book	Author/s	Publication
1	Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives	Nina Godbole, SunitBelapure, Wiley	April 2011 India Publications Released
2	Principles of Information Security	Michael E Whitman	Herbert J Mattord, 3rd Edition, 2011
3	Computer Security: Principles and Practice	William Stallings and Lawrie Brown	3rd edition, Pearson, 2015
4	Cyber Security Essentials	James Graham Richard Howard Ryan Olson	

SR NO	Topic	Lectures (Available on Youtube / Swayam / MOOCS etc)	Films	Journals / Articles / Case studies
1	Introduction to Cyber Security	https://onlinecourses.swayam2.ac.in /nou22_cs07/preview		
2	Cyber Security Tools Techniques and Counter Measures	https://onlinecourses.swayam2.ac.in /nou22_ge67/preview		
3	Cyber Security	https://onlinecourses.swayam2.ac.in /cec22_cs21/preview		

Course Code: B4-21/504A	Subject / Course: Angular JS	Marks: 100 Credits: 3

Course Objectives:

1. To understand Core Concepts of AngularJS.
2. To understand Directives and Expressions.
3. To understand Modules, Controller, View and Scope.
4. To understand Filter, Forms and Ajax Filters.
5. To understand Dependency Injection and Services.

Course Outcome:

After completing the course, the student shall be able to

CO1: Understand Core Concepts of AngularJS.

CO2: Design and implement Directives and Expressions.

CO3: Design and implement Modules, Controller, View and Scope.

CO4: Define and demonstrate Filter, Forms and Ajax Filters.

CO5: Define and demonstrate Dependency Injection and Services.

Unit	Unit Title	Contents	No of Lectures
I	AngularJS Core Concepts	1.1 What is AngularJS? 1.2 Difference between Javasript and Angular JS 1.3 Advantages of Angular 1.4 AngularJS MVC Architecture 1.5 Introduction to SPA 1.6 Setting up the environment 1.7 First App using MVC architecture	8
II	AngularJS Directives and Expressions	2.1 Understanding ng attributes ng-app, ng-init, ng-model, ng-controller, ng-bind, ng-repeat, ng-show, ng-readonly, ng-disabled, ng-if, ng-click 2.2 Expression and Data Binding 2.3 Working with directives	10
III	AngularJS Modules, Controller,	3.1 Angular Modules 3.2 Angular Controller 3.3 Angular View	10

Unit	Unit Title	Contents	No of Lectures
	View and Scope	3.4 Scope hierarchy	
IV	Filter, Forms and Ajax Filters	4.1 Built-in filters upper case and lower-case filters, date, currency and number formatting, orderBy, filter, custom filter 4.2 Angular JS Forms Working with AngularJS forms, model binding, form controller, Using CSS classes, form events, custom model update triggers, custom validation, $http service 4.3 Ajax implementation using $http	12
V	Dependency Injection, Services	5.1 What is dependency injection? 5.2 Understanding services 5.3 Using built-in service 5.4 Creating custom service, 5.5 Injecting dependency in service	8
Total No of Lectures			**48**

Teaching Methodology:

Unit	Unit Title	Teaching methodology	Practical	Outcome Expected		Weightage of Marks (%)
				Conceptual understanding Knowledge / Skills / Attributes etc.		
I	AngularJS Core Concepts	Lecture - Demonstration and Practical Implementation in Laboratory	practical	To Understand Core Concepts of AngularJS	critical thinking and problem solving skills	15%
II	AngularJS Directives and Expressions	Lecture - Demonstration and Practical Implementation in Laboratory	practical	To Design and implement Directives and Expressions.	critical thinking, problem solving, analytical reasoning	20%
III	AngularJS Modules, Controller, View and	Lecture - Demonstration and Practical Implementation	practical	To Design and implement Modules, Controller,	Life long Learning, \Application Skills	15%

Unit	Unit Title	Teaching methodology	Practical	Outcome Expected		Weightage of Marks (%)
				Conceptual understanding Knowledge / Skills / Attributes etc.		
	Scope	in Laboratory		View and Scope.		
IV	Filter, Forms and Ajax Filters	Lecture - Demonstration and Practical Implementation in Laboratory	practical	To Define and demonstrate Filter, Forms and Ajax Filters.	Problem solving, Experimental Learning	25%
V	Dependency Injection, Services	Lecture - Demonstration and Practical Implementation in Laboratory	practical	To Define and demonstrate Dependency Injection and Services.	Life long Learning, Experimental Learning, Application Skills	25%

Evaluation Method:

Unit	Evaluation Method	Marks (100)			Project / Practical (If any)
		Formative Assessment		Summative Assessment	
		CCE I (20)	CCE II (20)	SEMESTER (60)	
1	Test and lab course work	Assignment	Written Exam	Written Exam	Practical in Computer Laboratory
2	Assignment and Quiz	Assignment	Written Exam	Written Exam	Practical in Computer Laboratory
3	Test and Lab course work	Assignment	Written Exam	Written Exam	Practical in Computer Laboratory
4	Test, Quiz or Lab course work.	Assignment	Written Exam	Written Exam	Practical in Computer Laboratory
5	Assignment and Quiz	Assignment	Written Exam	Written Exam	Practical in Computer Laboratory

Suggested Readings:

Sr. No	Title of the book	Author	Publication	Edition	Place
1	Beginning Angular with Typescript (updated to Angular 5)	Greg Lim	Paperback	Latest	
2	Mastering Web Application Development with AngularJS	Pawel Kozlowski, Peter Bacon Darwin	Packt Publishing Limited	Latest	

Suggested Web / E-Learning Resources:

Sr. No.	Topic of the course	Lectures (Available on Youtube / Swayam / MOOCS etc.)	Link	Journals / Articles / Case studies
1		Swayam		online course
2		edX		online course

Course Code: B4- 21/504B	Subject / Course: PHP	Marks: 100 Credits: 3

Prerequisite:

1 Student should know the basics of HTML.

Course Objectives:

1. To understand the basic concepts of PHP.
2. To understand Functions and Strings in PHP
3. To understand different arrays in PHP
4. To understand object-oriented concepts in PHP

Course Outcome:

After completing the course, the student shall be able -

CO1: To implement the core concept of PHP

CO2: To implement functions and strings in PHP.

CO3: To implement arrays in PHP

CO4: To implement concepts of Object-Oriented Concepts using PHP

Unit	Unit Title	Contents	No. of Lectures
I	Introduction to PHP	1. Introduction to PHP 1.1 Introduction to PHP 1.2 What does PHP do? 1.3 Lexical structure 1.4 Language basics 1.4.1 Variable, constant, keywords, Data Types 1.4.2 Control Structures 1.4.3 Variables variable 1.4.4 Type casting, Type Juggling 1.4.5 $_GET, $_POST, $_REQUEST Variables	8
II	Function and String in PHP	2. Function and String in PHP 2.1 Defining and calling a function 2.2 Default parameters 2.3 Variable parameters, Missing parameters	12

Unit	Unit Title	Contents	No. of Lectures
		2.4 Variable function, Anonymous function 2.5 Types of strings in PHP 5.6 Printing functions 2.6 Encoding and escaping 5.8 Comparing strings 2.7 Manipulating and searching strings	
III	Arrays in PHP	3. Arrays in PHP 3.1 Indexed Vs Associative arrays 3.2 Identifying elements of an array 3.3 Storing data in arrays 3.4 Multidimensional arrays 3.5 Extracting multiple values 3.6 Converting between arrays and variables 3.7 Traversing arrays 3.8 Sorting 3.9 Action on entire arrays 3.10 Using arrays	16
IV	Introduction to Object Oriented Programming	4. Introduction to Object Oriented Programming 4.1 Classes 4.2 Objects 4.3 Introspection 4.4 Serialization 4.5 Inheritance 4.6 Interfaces 4.7 Encapsulation	12
Total No of Teaching Lectures			**48**
Total No of Lectures for Evaluation			**9**

Teaching Methodology:

Unit	Unit Title	Teaching methodology	Project (If any)	Outcome expected		Weightage of Marks (%)
				Conceptual understanding Knowledge / Skills / Attributes etc		
I	Introduction to PHP	Lecture - Demonstration and problem-based learning			• To have disciplinary knowledge of PHP.	20%
II	Function and String in PHP	Lecture - Demonstration and problem-based learning and its implementation in laboratory			• To develop disciplinary knowledge and apply analytical, creative, problem-solving skills for problem solving.	30%
III	Arrays in PHP	Lecture - Demonstration and problem-based learning and implementation in laboratory			• To develop and apply disciplinary analytical, creative, problem-solving skills for problem solving.	30%
IV	Introduction to Object Oriented Programming	Lecture - Demonstration and Practical implementation in Laboratory			• To develop and apply disciplinary analytical, creative, problem-solving skills for problem solving.	20%

Evaluation Methodology:

Unit	Evaluation Method	Marks (100)			Project/Practical (If any) 2 Credit (Considered under B4-21/506)
		Formative Assessment		Summative Assessment	
		CCE I (20)	CCE II (20)	SEMESTER (60)	
I	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory
II	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory
III	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory
IV	Assignment	Assignment	Written Exam	MCQ/ Written Examination	Practical in Computer Laboratory

Suggested Readings:

Sr. No	Title of Book	Author/s	Publication
1	Mastering PHP	HerbertSchildt	BPB Publication
2	Programming PHP	Rasmus Lerdorf and Kevin Tatroe	O'Reilly publication
3	Beginning PHP 5		Wrox publication

Suggested Web/E learning Resources:

SR NO	Topic	Lectures (Available on Youtube / Swayam / MOOCS etc)	Films	Journals / Articles / Case studies
1	All the Units	www.W3schools.com		

Code: B4-21/505 Subject: Project based on Dot Net/Python Total Credits: 3

Workload: 48 Hrs

Guidelines:

- Students should work in a team of maximum 2 students.
- Students can choose a project topic Dot Net/Python technology.
- The student group will work independently throughout the project work including: problem identification, information searching, literature study, design and analysis, implementation, testing, and the final reporting.
- Project guide must conduct project presentations to monitor the progress of the project groups.
- At the end of the project, the group should prepare a report which should conform to international academic standards. The report should follow the style in academic journals and books, with clear elements such as: abstract, background, aim, design and implementation, testing, conclusion and full references, Tables and figures should be numbered and referenced to in the report.
- The final project presentation with demonstration will be evaluated by the project guide (appointed by the college) and one more examiner.

Evaluation guidelines:

IA (30 marks)			**EE (70 marks)**		
First presentation	Second presentation	Documentation	Project Logic/Presentation	Documentation	Viva
10	10	10	40	10	20

Recommended Documentation contents:

Abstract

Introduction

-motivation
-problem statement
-purpose/objective and goals
-literature survey
-project scope and limitations

System analysis

- Existing systems

Code: B4-21/505 Subject: Project based on Dot Net/Python Total Credits: 3

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- scope and limitations of existing systems
- project perspective, features
- stakeholders

System Design

- Requirement analysis
- Functional requirements, performance requirements, security requirements etc.

- Design constraints
- System Model: DFD
- Data Model
- User interfaces

Implementation details

-Software/hardware specifications

Outputs and Reports Testing

Test Plan, Black Box Testing or Data Validation Test Cases, White Box Testing or Functional Validation Test cases and results

Conclusion and Recommendations

Future Scope

Bibliography and References

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

Practical Slips

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

Q1. Core Java:

A) Write a 'java' program to copy only non-numeric data from one file to another file. **[25M]**

B) Write a 'java' program to display characters from 'A' to 'Z'. **[15M]**

Q2. Angular JS:

A) Write an AngularJS script to display list of games stored in an array on click of button using ng-click. And also Demonstrate ng-init, ng-bind directive of AngularJS. **[40M]**

OR

PHP:

A) Write a PHP script for the following: Design a form to accept a string. Write a function to count the total number of vowels (a,e,i,o,u) from the string. Show the occurrences of each vowel from the string. Check whether the given string is a palindrome or not, without using built-in function. (Use radio buttons and the concept of function. Use 'include' construct or require stmt.) **[25M]**

B) A college has given roll number to each student, The roll number is six-digit number where first two digits are faculty (B.Sc., BCA, BA) third digit is year (Ist (1), IInd (2) and IIIrd (3)) and last three digit are actual number. Write PHP script to accept a number and print faculty, year and roll number of student. (e.g Rollno=BC1004, faculty=BCA, year=1st, rollno=004) **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Design a screen in Java to handle the Mouse Events such as MOUSE_MOVED and MOUSE_CLICK and display the position of the Mouse_Click in a TextField. (Use Swings) **[25M]**

B) Write a java program to display all the vowels from a given string. **[15M]**

Q2. AngularJS:

A) Write a HTML code using AngularJS to generate the following output
Undergraduate Courses (hint: use ng-repeat, ng-init directive)
i. BBA(CA)
ii. BCA(Science)
iii. B.Sc. (Computer Science)
Post Graduate Courses
i. M.Sc. (Computer Science)
ii. M.Sc. (CA)
iii. MCA **[40M]**

OR

PHP:

A) Write a PHP script for the following: Design a form to accept two strings from the user. Find the first occurrence and the last occurrence of the small string in the large string. Also count the total number of occurrences of small string in the large string. Provide a text box to accept a string, which will replace the small string in the large string. (Use built-in functions) **[25M]**

B) Write a PHP script to demonstrate the introspection for examining class (use function get_declared_classes (), get_class_methods() and get_class_vars()). **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

Q.1 Core Java:

A) Define an abstract class Shape with abstract methods area () and volume (). Derive abstract class Shape into two classes Cone and Cylinder. Write a java Program to calculate area and volume of Cone and Cylinder. (Use Super Keyword.) **[25M]**

B) Write a 'java' program to check whether given number is Armstrong or not. (Use static keyword) **[15M]**

Q.2. AngularJS:

Using AngularJS display the 10 student details in Table format (using ng-repeat directive use Array to store data) **[40M]**

OR

PHP:

A) Write a PHP script for the following: Design a form to accept two numbers from the user. Give options to choose the arithmetic operation (use radio buttons). Display the result on the next form. (Use the concept of function and default parameters. **[25M]**

B) Write a PHP script for the following: Design a form to accept a number from the user. Display the number and its factorial as a result on the next form. (Use the concept of function and default parameters. **[15M]**

Q.3 Viva [10M]

Q.4 Lab Book [10M]

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Code: B4-21/506

A) Write a java program using Applet to implement a simple arithmetic calculator.

B) Write a java program to display alternate character from a given string. **[15M]**

Q.2 AngularJS:

A) Write an AngularJS script to print details of bank (bank name, MICR code, IFC code, address etc.) in tabular form using ng-repeat **[40M]**

OR

PHP:

A) Write a PHP script for the following: Design a form to accept two strings from the user. Find whether the small string appears at the start of the large string. Provide a text box to accept the string that will replace all occurrences of small string present in the large string. Also split the large string into separate words. (Use regular expressions) **[25M]**

B) Write a Calculator class that can accept two values, then add them, subtract them, multiply them together, or divide them on request. For example:

```
$calc = new Calculator( 3, 4 );
echo $calc- >add(); // Displays “7”
echo $calc- >multiply(); // Displays “12”
```

[15M]

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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Code: B4-21/506

Q.1. Core Java:

A) Write a java program to accept list of file names through command line. Delete the files having extension .txt. Display name, location and size of remaining files.

[25M]

B) Write a java program to display following pattern:

5

4 5

3 4 5

2 3 4 5

1 2 3 4 5 **[15M]**

Q.2 AngularJS:

Write an AngularJS script for addition of two numbers using ng-init, ng-model & ng-bind. And also Demonstrate ng-show, ng-disabled, ng-click directives on button component. **[40M]**

OR

PHP:

A) Write a PHP script for the following: Design a form to accept the details of 5 different items, such as item code, item name, units sold, rate. Display the bill in the tabular format. Use only 4 text boxes. (Hint : Use of explode function.) **[25M]**

B) Write a PHP program to create a simple calculator that accepts two numbers and performs operations like add, subtract, multiplication and divide (using Self Processing form)

[15M]

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
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A) Write a java program to display transpose of a given matrix. **[25M]**

B) Write a java program to accept a number from user, if it zero then throw user defined Exception "Number Is Zero", otherwise calculate the sum of first and last digit of that number. (Use static keyword). **[15M]**

Q.2 AngularJS:

A) Using AngularJS Create a SPA that show Syllabus content of all subjects of SYBBA (CA) (use ng-view)

OR

PHP:

A) Write a PHP script for the following: Design a form to accept two strings. Compare the two strings using both methods (= = operator &strcmp function). Append second string to the first string. Accept the position from the user; from where the characters from the first string are reversed. (Use radio buttons) **[25M]**

B) Accept a number from the user and write a PHP program to display the multiplication table of the number. Use SELF processing form. **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
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Code: B4-21/506

A) Write a java program to accept details of 'n' cricket player (pid, pname, totalRuns, InningsPlayed, NotOuttimes). Calculate the average of all the players. Display the details of player having maximum average. (Use Array of Object) **[25M]**

B) Write a java AWT program to display Label with text "Dr. D Y Patil College", background color Red and font size 20 on the frame. **[15M]**

Q.2 AngularJS:

A) Using AngularJS Create a SPA that show Syllabus content of all subjects of SYBBA (CA)(use ng-view) **[40M]**

OR

PHP

A) Write a menu driven PHP program to perform the following operations on an associative array:

i. Display the elements of an array along with the keys.
ii. Display the size of an array
iii. Delete an element from an array from the given index.
iv. Reverse the order of each element's key-value pair.[Hint: use array_flip()]
v. Traverse the elements in an array in random order [[Hint: use shuffle()].

[25M]

B) Write a PHP Script login form and validate the password. Validation is the username and password should be same. Display "Authentic Login" is correct password and "INCORRECT LOGIN" if incorrect password (Use Sticky form concept)

[15M]

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
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B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program to display files having extension .txt from a given directory. **[25M]**

B) Define an Interface Shape with abstract method area(). Write a java program to calculate an area of Circle and Sphere.(use final keyword) **[15M]**

Q.2 **Angular JS:**

A) Create an HTML form using AngularJS that contain the Student Registration details and validate Student first and last name as it should not contain other than alphabets and age should be between 18 to 50 and display greeting message depending on current time using ng-show (e.g. Good Morning, Good Afternoon, etc.)(use AJAX). **[40M]**

OR

PHP

A) Write a menu driven PHP program to perform the following operations on associative arrays:

a) Sort the array by values (changing the keys) in ascending, descending order.

b) Also sort the array by values without changing the keys.

c) Filter the odd elements from an array.

d) Sort the different arrays at a glance using single function.

e) Merge the given arrays.

f) Find the Union, intersection& set difference of two arrays. **[25M]**

B) Create an abstract class Shape with methods calc_area( ) and calc_volume( ). Derive two classes Sphere(radius) , Cone(radius, height). Calculate area and volume of all. (Use Method overriding). **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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Code: B4-21/506

A) Write a java program to validate PAN number and Mobile Number. If it is invalid then throw user defined Exception "Invalid Data", otherwise display it. **[25M]**

B) Write a java Program to display Fibonacci series of n nos. **[15M]**

Q.2 AngularJS:

A) Create an HTML form using AngularJS that contain the Employee Registration details and validate DOB, Joining Date, and Salary and also create a simple arithmetic calculator using radio buttons (use ng-switch, ng-switch-when) **[40M]**

OR

PHP

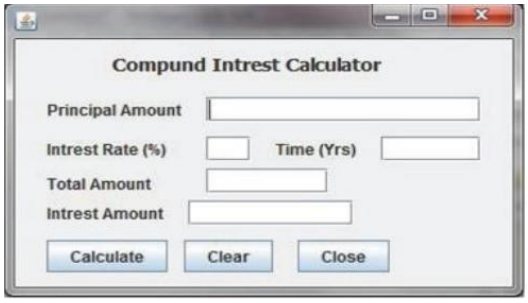
A) Write PHP script to define an interface which has methods area(), volume(). Define constant PI. Create a class cylinder which implements this interface and calculate area and volume. **[25M]**

B) Create a form to accept employee details like name(first middle,last), address, mobile number, PAN number from the user. Once the information is accepted display all the information on next form. **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

A) Write a java program for the following: Use Swings **[25M]**



B) Write a java program to count the frequency of each character in a given string.

[15M]

Q.2 AngularJS:

A) Using AngularJS Create a SPA that show address and contact details of Some 5-10 top Hotels which are in pune location.(use ng-view) **[40M]**

OR

.**PHP**

A) Write class declarations and member function definitions for an employee(code, name, designation). Design derived classes as emp_account(account_no, joining_date) from employee and emp_sal(basic_pay, earnings, deduction) from emp_account. Write a menu driven PHP program

a) to build a master table

b) to sort all entries

c) to search an entry

d) Display salary. **[25M]**

B) Write a PHP script to accept username and password. If in the first three chances, username and password entered is correct, then display "Welcome User" on the second form, otherwise display error message. **[15M]**

Q.3 Viva **[10 M]**

Q.4 Lab Book **[10 M]**

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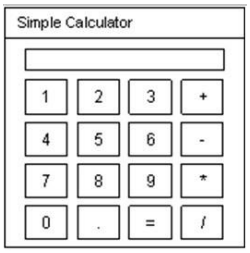
Code: B4-21/506

A) Create a calculator with functionality in an Applet. **[25M]**



B) Write a menu driven java program using command line arguments for the following: **[15M]**

1. Addition 2. Subtraction 3. Multiplication 4. Division.

Q.2 AngularJS:

A) Using AngularJS Create a SPA that show History of some(4-8) Historical Places (use MVC). **[40M]**

OR

PHP

A) Derive a class square from class Rectangle. Create one more class circle. Create an interface with only one method called area(). Implement this interface in all the classes. Include appropriate data members and constructors in all classes. Write a PHP program to accept details of a square, circle and rectangle and display the area. **[25M]**

B) Write a PHP script to accept 5 numbers in an array and display the same. **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Write a java program to display multiplication table of a given number into the List box by clicking on button. **[25M]**

B) Write a java program to display each String in reverse order from a String array. **[15M]**

Q.2 AngularJS:

A) Using AngularJS Create a SPA for customer registration visiting a departmental store. Form should consists of fields such as name, contact no., gender, favourite item(to be selected from a list of items with Quantity) and suggestions. Display the Bill with total no of items selected and total amount to be paid.(use filter) **[40M]**

OR

PHP

A) Write PHP Script to create a class account (accno,cust_name). Derive two classes from account as saving_acc(balance, min_amount) and current_acc(balance, min_amount). Display a menu a) Saving Account b) Current Account For each of this display a menu with the following options. 1. Create account 2. Deposit 3. Withdrawal **[25M]**

B) Write a PHP script for the following: Design a form to accept a number from the user. Perform the operations and show the results.

1) Factorial of a number using Recursion.
2) Add the digits of that number to reduce it to single digit.

(use the concept of self processing page.) **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Write a java program that asks the user name, and then greets the user by name. Before outputting the user's name, convert it to upper case letters. For example, if the user's name is Raj, then the program should respond "Hello, RAJ, nice to meet you!". **[25M]**

B) Write a java program to accept 'n' integers from the user & store them in an ArrayList collection. Display the elements of ArrayList collection in reverse order. **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA that accept the details of student and display mark sheet (roll_ no, student_ name, class, sub1, sub2, sub3, total, percentage, grade) **[40M]**

OR

PHP

A) Write class declarations and member function definitions for following employee (code, name, designation). Design derived classes as emp_account (account_no, joining_date) from employee and emp_sal(basic_pay, earnings, deduction) from emp_account. Write a PHP Script to create 5 objects (pass details using parameterized constructor) and Display details of Employees who having Maximum and Minimum Salary. **[25M]**

B) Create student registration form and display details in the next page. (Use sticky form concept). **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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B) Write a java AWT program to accept the details of employee (Eno, EName, Sal) and display it on next frame using appropriate event. **[25M]**

A) Write a Java program to calculate power of a number using recursion. **[15M]**

Q.2 AngularJS:

A) Using AngularJS Create a SPA to take the information of a customer for booking a plan consisting of fields such as name, address, contact no., gender, Date of booking, date of journey, no of passenger, name of passenger etc. Display the e –Ticket. **[40M]**

OR
PHP

A) Using regular expressions check for the validity of entered email-id. The @ symbol should not appear more than once. The dot (.) can appear at the most once before @ and at the most twice or at least once after @ symbol. The substring before @ should not begin with a digit or underscore or dot or @ or any other special character. (Use explode and ereg function.) **[25M]**

B) Write a PHP Script to display Server information in table format (Use $_SERVER). **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

A) Write an applet application to display smiley face. **[25M]**

B) Write a java program to search given name into the array, if it is found then display its index otherwise display appropriate message. **[15M]**

Q.2 AngularJS:

A) Using AngularJS Create a SPA for Bus Ticket Reservation consisting of fields : Name, Address, contact no, source station(Dropdown list), Destination station, Date of booking, date of journey, no of passenger, name of passenger, gender of passenger etc. Display the e –Ticket. **[40M]**

OR

PHP

A) Write PHP program to create input form for Grocery that displays List of grocery items with checkboxes and create a bill according to list of items selected after clicking submit button. **[25M]**

B) To create form that accept the user details. write php program to capitalize of first letter of each name and check user email address contain @ symbol. **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Write a java program to accept n employee names from user. Sort them in ascending order and Display them.(Use array of object and Static keyword) **[25M]**

B) Write a java program to calculate sum of digits of a given number using recursion. **[15M]**

Q.2 AngularJS:

A) Using AngularJS display the student details who are live in pune in Table format (using ng-repeat directive, use Array to store data, use filter) **[40M]**

OR

PHP

A) Write a PHP program that accept customer name, consumer number and number of electricity units consumed from an input form and print electricity bill from following data

- For first 50 units – Rs. 3.50/unit
- For next 100 units – Rs. 4.00/unit
- For next 100 units – Rs. 5.20/unit
- For units above 250 – Rs. 6.50/unit
- Fixed meter and service charge- Rs. 150/- **[25M]**

B) Design a HTML page to accept a number and write a PHP script to display that number in words e.g. 123 - one two three **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Define a class Product (pid, pname, price, qty). Write a function to accept the product details, display it and calculate total amount. (use array of Objects) **[25M]**

B) Write a java Program to accept 'n' no's through command line and store only armstrong no's into the array and display that array. **[15M]**

Q.2 AngularJS:

A) Write an AngularJS script to search student name according to the character typed and display details (use array and filter). **[40M]**

OR

PHP

A) Write a PHP program for course registration of Learner in an institute that accept Name, Course to be admitted, Mobile number using input form validation such as Name should be only string of character, mobile number should contain digits with valid length and so on. and give feedback to Learner with registration details including registration number. **[25M]**

B) Accept a String from the user. Write a PHP function to count the total number of vowels (a,e,i,o,u) from the string. Show the occurrences of each vowel from the string **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Write a java program to copy the data from one file into another file, while copying change the case of characters in target file and replaces all digits by '*' symbol. **[25M]**

B) Write a Java program to calculate area of Circle, Triangle & Rectangle.(Use Method Overloading) **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA that shows Teacher Profile who are teaching SYBBA (CA) with photo. **[40M]**

OR

PHP:

A) Write a PHP script to create a login form with a username and password. Once the user logs in, the second form should be displayed to accept user details (name, city, phoneno). If the user doesn't enter information within a specified time limit, expire his session and give a warning. **[25M]**

B) Write a PHP script to accept a string and then display each word of string in reverse order. (use concept of self processing form) **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Create an Applet that displays the x and y position of the cursor movement using Mouse and Keyboard. (Use appropriate listener) **[25M]**

B) Write a Java program to display Fibonacci series using function. **[15M]**

Q.2 AngularJS:

A) Using AngularJS display the Employee details order by salary in Table format (using ng-repeat directive, use Array to store data, use filter) **[40M]**

OR

PHP:

A) Design HTML page to read the value for n. Write a PHP script to display first n even numbers with font size = 12 and color = red and first n odd numbers with font face = Times new Roman , size = 17 & color = yellow. **[25M]**

B) Write PHP program to select list of subjects (use multivalued parameter) displays on next page.(Use listbox to select subject) **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Construct a Linked List containing name: CPP, Java, Python and PHP. Then extend your java program to do the following: i. Display the contents of the List using an Iterator ii. Display the contents of the List in reverse order using a ListIterator. **[25M]**

B) Write a java program using AWT to create a Frame with title "TYBBACA", background color RED. If user clicks on close button then frame should close. **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA that to accept the details such as name, mobile number, pin-code and email address and make validation. Name should contain character only, mobile number should contain only 10 digit, Pin code should contain only 6 digit, email id should contain only one @, . Symbol **[40M]**

OR

PHP:

A) Write a PHP script to change the preferences of your web page like font style, font size, font color, background color using cookie. Display selected settings on next web page and actual implementation (with new settings) on third web page. **[25M]**

B) Write a PHP program to accept two string from user and check whether entered strings are matching or not.(use sticky form concept) **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Create a hashtable containing city name & STD code. Display the details of the hashtable. Also search for a specific city and display STD code of that city. **[25M]**

B) Write a java program to display each word from a file in reverse order. **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA that to accept the details of doctor(5-6) having field's dno, dname, address, and phone number. Display those in table format. (use MVC.) **[40M]**

OR

PHP:

A) Write a PHP script to create a form to accept student information (name, class, address). Once the student information is accepted, accept marks in next form (Phy, Bio, Chem, Maths, Marathi, English).Display the mark sheet for the student in the next form containing name, class, marks of the subject, total and percentage. **[25M]**

B) Write PHP script to demonstrate the concept of introspection for examining object. **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Write a java program for the following: **[25M]**

1. To create a file.
2. To rename a file.
3. To delete a file.
4. To display path of a file.

b) Write a Java program to calculate factorial of a number using recursion. **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA that accept Voters details and check proper validation for (name, age, and nationality) as Name should be in upper case letters, Age should not be less than 18 yrs and Nationality should be Indian. **[40M]**

OR

PHP:

A) Write a PHP program to create a shopping mall UI. User must be allowed to do purchase from two pages. Each page should have a page total. The third page should display a bill, which consists of a page total of whatever the purchase has been done and print the total. (Use http session tracking).

[25M]

B) Write a PHP Script to display response header information for any text file using $_http_response_header.

[15M]

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

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A) Write a java program to design following Frame using Swing. **[25M]**

B) Write a java program to check whether given file is hidden or not. If not then display its path, otherwise display appropriate message. **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA to carry out validation for a username entered in textbox. If the textbox is blank, alert 'Enter username'. If the number of characters is less than three, alert ' Username is too short'. If value entered is appropriate the print 'Valid username' and password should be minimum 8 characters. **[40M]**

OR

PHP:

A) Write a PHP script to create a form to accept customer information (name, address, ph-no). Once the customer information is accepted, accept product information in the next form (Product name, qty, rate). Display the bill for the customer in the next form. Bill should contain the customer information and the information of the products entered. **[25M]**

B) Write a menu driven program in PHP to perform the following stack related operations:[Hint: use Array_push(), Array_pop(), Array_shift(), array_unshift() functions]

i. Insert an element in stack
ii. Delete an element from stack
iii. Display the contents of stack **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Create a package named Series having three different classes to print series: i. Fibonacci series ii. Cube of numbers iii. Square of numbers. Write a java program to generate 'n' terms of the above series. **[25M]**

A) Write a java program to count number of digits, spaces and characters from a file. **[15M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA to fetch suggestions when is user is typing in a textbox. (eg like google suggestions. Hint create array of suggestions and matching string will be displayed). **[40M]**

OR

PHP:

A) Write a PHP script to accept username and password. If in the first three chances, username and password entered is correct, then display second form, otherwise display error message. **[25M]**

B) Write a menu driven program in PHP to perform the following queue related operations: [Hint:use Array_push(), Array_pop(), Array_shift(), array_unshift() functions] **[15M]**

i. Insert an element in queue

ii. Delete an element from queue

iii. Display the contents of queue

Q.3 Viva [10M]

Q.4 Lab Book [10M]

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program to check whether given string is palindrome or not. **[15M]**

B) Create a package named Series having three different classes to print series: i. Fibonacci series ii. Cube of numbers iii. Square of numbers Write a java program to generate 'n' terms of the above series. **[25M]**

Q.2 AngularJS:

A) Create an HTML form Using AngularJS for Login system and validate email ID using Regular Expression and password should be minimum 8 characters. **[40M]**

OR

PHP:

A) Write a PHP Script for the following:

-.Declare a Multidimensional Array.

-.Display specific element from a Multidimensional array.

-.Also delete given element from the Multidimensional array.

-.Define an array. **[25M]**

B) Write a PHP program to accept two string from user and check whether entered strings are matching or not.(use sticky form concept) **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program to display ASCII values of the characters from a file. **[15M]**

B) Write a java program using applet to draw Temple. **[25M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA for eLearning System. **[40M]**

OR

PHP:

A) Derive a class square from class Rectangle. Create one more class circle. Create an interface with only one method called area(). Implement this interface in all the classes. Include appropriate data members and constructors in all classes. Write a PHP program to accept details of a square, circle and rectangle and display the area. **[25M]**

B) Write a menu driven program in PHP to perform the following operations on an associative array:

i. Accept the array

ii Display the elements of an array along with the keys.

iii. Display the size of an array

iv. Delete an element from an array from the given index. **[25M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program to accept a number from user, If it is greater than 1000 then throw user defined exception "Number is out of Range" otherwise display the factors of that number. (Use static keyword) **[15M]**

B) Write a java program to accept directory name in TextField and display list of files and subdirectories in List Control from that directory by clicking on Button. **[25M]**

Q.2 AngularJS:

A) Using AngularJS create a SPA for a Recipe Book. **[40M]**

OR

PHP:

A) Write PHP script to define an interface which has methods area(), volume(). Define constant PI. Create a class cylinder which implements this interface and calculate area and volume. **[25M]**

B) Write a PHP script to change Background color of the browser using switch statement according to day of the week. **[15M]**

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program to count the number of integers from a given list. (Use Command line arguments). **[15M]**

B) Write a java Program to accept the details of 5 employees (Eno, Ename, Salary) and display it onto the JTable. **[25M]**

Q.2 AngularJS:

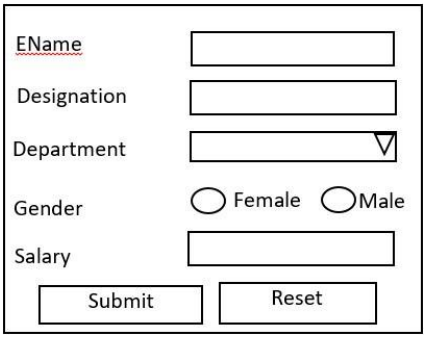
A) Using AngularJS create a SPA that clone the "Hacker News" website. **[40M]**

OR

PHP:

A) Write a menu driven PHP program to perform the following operations on an associative array:
i. Display the elements of an array along with the keys.
ii. Display the size of an array
iii. Delete an element from an array from the given index.
iv. Reverse the order of each element's key-value pair.[Hint: use array_flip()]
v. Traverse the elements in an array in random order [[Hint: use shuffle()]. **[25M]**

B) Write a PHP script to accept the details of Employee(EName, Designation, Department Gender ,Salary) and display it on next page. **[15M]**



Q.4 Viva **[10M]**

Q.5 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program using Applet to display a smiley. **[25M]**

B) Write a java program to check whether given candidate is eligible for voting or not. Handle user defined as well as system defined Exception. **[15M]**

Q.2 AngularJS:

A) Using AngularJS Develop Online School System. **[40M]**

OR

PHP:

A. Write a php script to demonstrate any 6 built-in string functions. Accept data from the user as required.

B. Write a simple PHP program which accepts two numbers and displays the addition and subtraction of the numbers(use functions).

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

MES Garware College of Commerce
T.Y.B.B.A.(C.A.) Semester - V
Lab Course: (CA-506) Computer Laboratory Based on
B4-21/501 and B4-21/504 (4 credit)
Code: B4-21/506

A) Write a java program to design a following GUI (Use Swing). **[25M]**

B) Write a java program to accept a number from a user, if it is zero then throw user defined Exception "Number is Zero". If it is non-numeric then generate an error "Number is Invalid" otherwise check whether it is palindrome or not. **[15M]**

Q.2 AngularJS:

A) Using AngularJS Implement E-commerce Website. **[40M]**

OR

PHP:

A) Write a PHP script for the following: Design a form to accept two strings. Compare the two strings using both methods (= = operator &strcmp function). Append second string to the first string. Accept the position from the user; from where the characters from the first string are reversed. (Use radio buttons)

Q.3 Viva **[10M]**

Q.4 Lab Book **[10M]**

Course Code: B4- 21/507	Subject / Course: J-Query	Marks: 50 Credits: 2

Course Objectives:

1. To learn handling different events for different Controls using J-query
2. To learn how to provide effects to the elements or sections in the Html page.
3. To learn manipulating elements by adding CSS classes dynamically, by inserting Elements.

Course Outcome:

After completing the course, the student shall be able to

CO1: Understanding the concept and working of J-query

CO2: learning of Basics of HTML with different effects.

CO3: using of CSS with dynamic operations

Unit	Unit Title	Contents	No of lectures
I	Introduction	1.1 jQuery Introduction 1.2 Install and Use jQuery Library 1.3 Un-Obstructive JavaScript 1.4 First jQuery Example 1.5 jQuery Syntax 1.6 How to escape a special characters 1.7 Basic Selectors 1.8 Traversal Functions	10
II	HTML Manipulation	2.1 Getting Setting values from elements 2.2 Handling attributes 2.3 Inserting New elements 2.4 Deleting/Removing elements 2.5 CSS manipulations 2.6 Dimensions 2.7 Positioning	10
III	Effects and Events Effects:	3.1 Showing/Hiding elements 3.2 Sliding elements 3.3 Fading elements 3.4 Deleting animation elements	10

Unit	Unit Title	Contents	No of lectures
		3.5 Custom animation Events: 3.6 Working with events.	
Total No of Teaching Lectures			**30**

Teaching Methodology:

Unit	Unit Title	Teaching methodology	Project / Hands on exposure / Practice based	Outcome expected		Weightage of Marks (%)
				Conceptual understanding Knowledge / Skills / Attributes etc		
I	jQuery Introduction	Lecture method			• Disciplinary knowledge • Critical thinking • Moral and Ethical Awareness/Reasoning	35%
II	HTML Manipulation	Lecture method			• Problem Solving • Analytical Reasoning • Reflective Thinking • Application Skills • Employability	35%
III	Effects and Events Effects:	Lecture method			• Problem Solving • Critical thinking • Reflective Thinking • Professional Skills • Application Skills	30%

Evaluation Method:

Unit	Evaluation Method	Marks (100)			Project / Practical (If any) 1 Credit
		Formative Assessment		Summative Assessment	
		CCE I (20)	CCE II (20)	SEMESTER (60)	
I	MCQ	MCQ		MCQ/ Written Examination	Nil
II	MCQ	MCQ Problem Solving		MCQ/ Written Examination	Nil
III	MCQ and assignment	Assignment		MCQ/ Written Examination	Nil

Suggested Readings:

Sr. No.	Title of the Book	Author/s	Publication	Place
1	jQuery pocket reference	by David Flanagan		
2	Learning jQuery	by Jonathan Chaffer		
3	JavaScript and jQuery	by David Sawyer McFarland		

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