A

COURSE FILE REPORT

ON

"WEB TECHNOLOGIES"

III B-Tech II Semester

Submitted by

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Department

of

COMPUTER SCIENCE & ENGINEERING

CMR ENGINEERING COLLEGE

(UGC Autonomous)

KANDLAKOYA (V), MEDCHAL (M), R.R.DIST.

A.Y 2023-2024

CMR ENGINEERING COLLEGE
UGC AUTONOMOUS
(Approved by AICTE - New Delhi. Affiliated to JNTUH and Accredited by NAAC & NBA)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INSTRUCTOR NAME: S Kiran Kumar**ACADEMIC.YEAR:2023-24**

SUBJECT NAME: WEB TECHNOLOGIES   **CLASS ROOM NO: B-218**

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B.Tech : III YEAR II SEM

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SEM START AND SEM END DATES: 29-01-2024 TO 08-06-2024

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1. DEPARTMENT VISION & MISSION

Vision:

> To produce globally competent and industry-ready graduates in Computer Science & Engineering by imparting quality education with the know-how of cutting-edge technology and holistic personality.

Mission:

> **1**. To offer high-quality education in Computer Science & Engineering in order to build core competence for the graduates by laying a solid foundation in Applied Mathematics and program frameworkwith a focus on concept building.

> **2**. The department promotes excellence in teaching, research, and collaborative activities to prepare graduates for a professional career or higher studies.

> **3**. Creating an intellectual environment for developing logical skills and problem-solving strategies, thus developing, an able and proficient computer engineer to compete in the current global scenario.

2. LIST OF PEOs, POs AND PSOs

2.1 Program Educational Objectives (PEO):

> **PEO 1:** Excel in professional career and higher education by acquiring knowledge of mathematical computing and engineering principles.

> **PEO 2:** To provide an intellectual environment for analyzing and designing computing systems for technical needs.

> **PEO 3:** Exhibit professionalism to adapt current trends using lifelong learning with legal and ethical responsibilities.

> **PEO 4:** To produce responsible graduates with effective communication skills and multidisciplinary practices to serve society and preserve the environment.

2.2. Program Outcomes (POs):

Engineering Graduates will be able to satisfy these NBA graduate attributes:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

2.3 Program Specific Outcomes (PSOs):

PSO1: Professional Skills and Foundations of Software development: Ability to analyze, design and develop applications by adopting the dynamic nature of Software developments.

PSO2: Applications of Computing and Research Ability: Ability to use knowledge in cutting edge technologies in identifying research gaps and to render solutions with innovative ideas.

3. COURSE OBJECTIVES AND COURSE OUTCOMES

Course Objectives:

1. To introduce PHP language for server-side scripting

2. To introduce XML and processing of XML Data with Java

3. To introduce Server-side programming with Java Servlets and JSP

4. To introduce Client-side scripting with Javascript and AJAX.

Course Outcomes

1	**Understanding** of server-side scripting with PHP language
2	**Illustrate** the representation of data in XML format and Parses the data using various Java Parsers.
3	**Introduce**server side programming with java servlets
4	**Apply** JSP concepts to **create** dynamic web pages by reducing the code complexity and store data in database.
5	**Develop** appropriate client-side scripting programs using Java Script and AJAX.[**Creating] & Determine** the appropriate web technology and builds web applications.

REVISED Bloom's Taxonomy Action Verbs

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	• Choose • Define • Find • How • Label • List • Match • Name • Omit • Recall • Relate • Select • Show • Spell • Tell • What • When • Where • Which • Who • Why	• Classify • Compare • Contrast • Demonstrate • Explain • Extend • Illustrate • Infer • Interpret • Outline • Relate • Rephrase • Show • Summarize • Translate	• Apply • Build • Choose • Construct • Develop • Experiment with • Identify • Interview • Make use of • Model • Organize • Plan • Select • Solve • Utilize	• Analyze • Assume • Categorize • Classify • Compare • Conclusion • Contrast • Discover • Dissect • Distinguish • Divide • Examine • Function • Inference • Inspect • List • Motive • Relationships • Simplify • Survey • Take part in • Test for • Theme	• Agree • Appraise • Assess • Award • Choose • Compare • Conclude • Criteria • Criticize • Decide • Deduct • Defend • Determine • Disprove • Estimate • Evaluate • Explain • Importance • Influence • Interpret • Judge • Justify • Mark • Measure • Opinion • Perceive • Prioritize • Prove • Rate • Recommend • Rule on • Select • Support • Value	• Adapt • Build • Change • Choose • Combine • Compile • Compose • Construct • Create • Delete • Design • Develop • Discuss • Elaborate • Estimate • Formulate • Happen • Imagine • Improve • Invent • Make up • Maximize • Minimize • Modify • Original • Originate • Plan • Predict • Propose • Solution • Solve • Suppose • Test • Theory

Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing, Abridged Edition. Boston, MA: Allyn and Bacon.

Action Words for Bloom's Taxonomy

Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose
describe	interpret	illustrate	classify	evaluate	create
label	paraphrase	modify	contrast	order	plan
list	summarize	use	distinguish	appraise	combine
name	classify	calculate	infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	extend	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	identify	manipulate	survey	grade	produce
discover	indicate	paint	advertise	measure	rearrange
duplicate	infer	prepare	appraise	predict	rewrite
enumerate	relate	produce	break down	rank	role-play
listen	restate	report	calculate	score	adapt
observe	select	teach	conclude	select	anticipate
omit	translate	act	correlate	test	arrange
read	ask	administer	criticize	argue	assemble
recite	cite	articulate	deduce	conclude	choose
record	discover	chart	devise	consider	collaborate
repeat	generalize	collect	diagram	critique	collect
retell	give examples	compute	dissect	debate	devise
visualize	group	determine	estimate	distinguish	express
	illustrate	develop	evaluate	editorialize	facilitate
	judge	employ	experiment	justify	imagine
	observe	establish	focus	persuade	infer
	order	examine	illustrate	rate	intervene
	report	explain	organize	weigh	justify
	represent	interview	outline		make
	research	judge	plan		manage
	review	list	question		negotiate
	rewrite	operate	test		originate
	show	practice			propose
	trace	predict			reorganize
	transform	record			report
		schedule			revise
		simulate			schematize
		transfer			simulate
		write			solve
					speculate
					structure
					support
					test
					validate

4. SYLLABUS COPY

UNIT- I

Introduction to PHP: Declaring variables, data types, arrays, strings, operators, expressions, control structures, functions, Reading data from web form controls like text boxes, radio buttons, lists etc., Handling File Uploads. Connecting to database (MySQL as reference), executing simple queries, handling results, Handling sessions and cookies File Handling in PHP: File operations like opening, closing, reading, writing, appending, deleting etc. on text and binary files, listing directories.

UNIT- II

HTML Common tags- List, Tables, images, forms, Frames; Cascading Style sheets; **XML:** Introduction to XML, Defining XML tags, their attributes and values, Document Type Definition, XML Schemes, Document Object Model, XHTML Parsing XML Data – DOM and SAX Parsers in java.

UNIT – III

Introduction to Servlets: Common Gateway Interface (CGt), Life cycle of a Servlet, deploying a servlet, The Servlet API, Reading Servlet parameters, Reading Initialization parameters, Handling Http Request & Responses, Using Cookies and Sessions, connecting to a database using JDBC.

UNIT – IV

Introduction to JSP: The Anatomy of a JSP Page, JSP Processing, Declarations, Directives, Expressions, Code Snippets, implicit objects, Using Beans in JSP Pages, Using Cookies and session for session tracking, connecting to database in JSP.

UNIT – V

Client-side Scripting: Introduction to Javascript, Javascript language – declaring variables, scope of variables, functions. event handlers (onclick, onsubmit etc.), Document Object Model, Form validation.

TEXT BOOKS:

1. Web Technologies, Uttam K Roy, Oxford University Press
2. The Complete Reference PHP — Steven Holzner, Tata McGraw-Hill

REFERENCE BOOKS

1. Web Programming, building internet applications, Chris Bates 2″ edition, Wiley Dreamtech

2. Java Server Pages —Hans Bergsten, SPD O'Reilly,

 3. Java Script, D.Flanagan

 4. Beginning Web Programming-Jon Duckett WROX. R

5. Programming world wide web, R.W.Sebesta, Fourth Edition, Pearson.

6. Internet and World Wide Web — How to program. Dietel and Nieto, Pearson.

5. INDIVIDUAL TIME TABLE (S KIRAN KUMAR)

Time	9:10AM-10:10AM	10:10 AM-11:00AM	11:00 AM-11:50AM	11:50AM-12:40PM	12:40PM-1:20PM	1:20PM-2:20PM	2:20PM-3:10PM	3:10PM-4:00PM
Period Day	I	II	III	IV		V	VI	VII
MON		III-C WT LAB					III-C WT	
TUE						III-C WT		
WED		III-C WT		\				
THU			III-C WT			III-C WT LAB		
FRI	III-C WT		III-C WT					
SAT								

6. SESSION PLAN/LESSON PLAN

S.NO	Topic (JNTU syllabus)	Sub-Topic	NO. OF LECTURES REQUIRED	Suggested Books	Teaching Methods
UNIT – I					
1		Introduction to HTML	L1	T2	M1
2		Basic HTML Tags	L2 – L4	T2	M1
3		Introduction to PHP	L5	T2	M1
4		Declaring variables	L6	T2	M1
5		data types	L7	T2	M1
6		arrays,	L8	T2	M1
7		strings	L9	T2	M1
8		Operators	L10	T2	M1
9	**Introduction to PHP**	expressions	L11	T2	M1
10		control structures	L12	T2	M1
11		functions	L13	T2	M1
12		Reading data from web form controls like text boxes,	L14	T2	M4(PPT)
13		Reading data from radio buttons, lists etc.,	L15	T2	M4(PPT)
14		Handling File Uploads.	L16	T2	M4(PPT)
15		Connecting to database (MySQL as reference)	L17	T2	M4(PPT)
16		executing simple queries	L18	T2	M11

17		handling results	**L19**	**T2**	**M11**
18		Handling sessions	**L20**	**T2**	**M11**
19		Handling cookies on text and binary files, listing directories.	**L21**	**T2**	**M11**
20		cookies File Handling in PHP: File operations like opening, closing, reading, writing, appending, deleting etc.	**L22-25**	**T2**	**M11**
21		Listing Directories	**L26**	**T2**	**M11**
UNIT – II					
22		HTML Common tags	**L27**	**T1**	**M1**
23		List, Tables	**L28**	**T1**	**M1**
24		Images, forms	**L29**	**T1**	**M1**
25		Frames; Cascading Style sheets;	**L30**	**T1**	**M1**
26		Introduction XML tags, their attributes and values to XML	**L31**	**T1,R1**	**M1**
27	**HTML,XML**	Document Type Definition	**L32**	**T1,R1**	**M1**
28		XML Schemes	**L33**	**T1,R1**	**M4(PPT)**
29		XHTML Parsing XML Data – DOM and SAX Parsers in java.	**L34**	**T1,R1**	**M4(PPT)**
		UNIT-III			

30		Introduction to servlets	**L35**	**T1**	**M4(PPT)**
31		Common Gateway Interface (CGI),	**L36**	**T1**	**M4(PPT)**
32		Life cycle of a Servlet	**L37**	**T1**	**M4(PPT)**
33		Deploying a servlet	**L38**	**T1**	**M4(PPT)**
34		The Servlet API	**L39**	**T1**	**M1**
35		Reading Servlet parameters, Reading Initialization parameters	**L40**	**T1**	**M1**
36	**Introduction to Servlets**	Handling Http Request & Responses	**L41**	**T1**	**M4(PPT)**
37		Cookies and Sessions,	**L42**	**T1**	**M4(PPT)**
38		connecting to a database using JDBC.	**L43**	**T1**	**M4(PPT)**
		UNIT –IV			
39		Introduction toJSP	**L44**	**T1,R2**	**M1**
40		Anatomy of a JSP Page	**L45**	**T1,R2**	**M1**
41	**Introduction to JSP**	JSP Processing	**L46**	**T1,R2**	**M1**
42		Declarations	**L47**	**T1,R2**	**M1**
43		Directives, Expressions, Code Snippets	**L48**	**T1,R2**	**M11**
44		implicit objects,	**L49**	**T1,R2**	**M11**
45		Using Beans in JSP Pages	**L50**	**T1,R2**	**M1**

46		Using Cookies and session for session tracking	**L51**	**T1**	**M4(PPT)**
47		connecting to database in JSP	**L52**	**T1**	**M4(PPT)**
UNIT –V					
48		Introduction to Javascript	**L53**	**T1**	**M1**
49		, Javascript language – declaring variables	**L54**	**T1**	**M4(PPT)**
50	**Client-side Scripting**	scope of variables	**L55**	**T1**	**M4(PPT)**
51		functions	**L56**	**T1**	**M11**
52		event handlers (onclick, onsubmit etc.	**L57, L58**	**T1**	**M11**
53		Document Object Model	**L59**	**T1**	**M1**
54		Form validation	**L60**	**T1**	**M1**

METHODSOFTEACHING:

M1:Lecture Method	**M11:Tutorial**
M2:Demo Method	**M12:Assignment**
M3:Guest Lecture	**M13:Industry Visit**
M4:Presentation/PPT	**M14:Project Based Learning**
M5:Mind Map	**M15:Mnemonics**
M6:ATL Lab	**M16:Laboratory Improvement Future Trends**
M7:Group Learning	**M17:Collaborative Learning**
M8:One minute Paper	**M18:Think Pair Share**
M9 :Case Study	**M19:NPTEL Video Lectures**
M10:Flipped Classes	**M20:Innovative Assignment**

7. SESSION EXECUTION LOG:

S no	Unit	Scheduled started date	Completed date	Remarks
1	I	29-01-2024	02-03-2024	COMPLETED
2	II	04-03-2024	18-03-2024	COMPLETED
3	III	21-03-2024	15-04-2024	COMPLETED
4	IV	16-04-2024	6-05-2024	COMPLETED
5	V	7-05-2024	8-06-2024	COMPLETED

8. LECTURE NOTES – (HAND WRITTEN)

9. ASSIGNMENT QUESTIONS ALONG WITH SAMPLE ASSIGNMENTS SCRIPTS

Answer all 5 questions:

1. a. Explain the steps involved in connecting the MYSQL database from PHP? Write an example PHP script. Illustrating how to retrieve and display records from the database? (CO1)
   b. Define Session and Cookies. Explain with an example program.(CO1)

2. a. Discuss PHP file handling in detail with examples.(CO1)
    b. Explain in detail about arrays and its types with suitable example. (CO1)

3. a. Explain about various types of XML parsers.(CO2)
    b. Define Document type definition (DTD) in XML. What is difference between internal and External DTD(CO2)

4. a. What is XML Schema? State its purpose and list its advantages over DTD.(CO2)
   b. What is XML. List characteristics of XML? Explain the working of XML process in detail.(CO2)

5. a. Elaborate the Common Gateway Interface and its important. (CO3)
    b. Explain the life cycle of a Servlet with a neat sketch. (CO3)

III.B.TECH I SEM - II MID ASSIGNMENT QUESTIONS   **CMREC/CSE/2023-2024**

Subject: WEB TECHNOLOGIES (CS603PC)   BRANCH: CSE

Answer the following questions

1. a. Define JDBC. Explain JDBC Drivers with a neat diagram.   (CO3)

   b. Describe cookies and sessions in Servlets. Illustrate this with example programs.   (CO3)

2. a. What is a Java Bean? Explain Deploying java beans in a JSP page with example. .   (CO4)

   b. Explain about the JSP Directive Elements? Explain each one of them in detail   (CO4)

3. a. List the statements that are used to connect JSP with JDBC.   (CO4)

   b. Explain Accessing a Database from a JSP with example.   (CO4)

4. a. How can you define event handler? Explain in detail about different event handlers.
   Write a JavaScript to demonstrate event handling.

                                                                                                (CO5)

   b. Discuss the Document Object Model in JavaScript in detail.   (CO5)

5. a. Give a brief note on built-in Objects in JavaScript with example.   (CO5)

   b. Describe about form validation concept in JavaScript. Explain with an example program.   (CO5)

10. MID EXAM QUESTION PAPERS ALONG WITH SAMPLE ANSWERS SCRIPTS

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III.B.TECH- II-SEM-I MID EXAMINATION   **Date: Time: 28/03/2024**
10:00-11:30 AM

Subject: WEB TECHNOLOGIES (CS603PC) Branch: Common to CSE   Marks: 25 M

Note: Question paper contains two parts, Part - A and Part - B.

Part-A is compulsory which carries 10 marks. Answer all questions in part-A.

Part-B consists of (2 1/2) units. Answer any one full question from each unit. Each question carries 5 marks and may have a, b, c sub questions.

PART-A   5X2=10

1. Define functions in PHP with an example.   (CO1)
2. What is session tracking? Explain.   (CO1)
3. What is Document Object Model?   (CO2)
4. What is DTD? Explain Public DTD and private DTD.   (CO2)
5. What are the Difference between Generic Servlet and HTTP Servlet? (CO3)

PART-B   3X5=15

6. a) Explain in detail about arrays and its types with suitable example.   (CO1)
    b) write a php program to find given no is odd or even.   (CO1)

(OR)

7. a) Explain read and write file operations in PHP?   (CO1)

    b) Write a PHP script to add a user into login table in MYSQL database. (CO1)

8. What is XML. List characteristics of XML? Explain the working of XML process in detail.   (CO2)

(OR)

9. Explain about various types of XML parsers with example.   (CO2)

10. a. Explain Common Gateway Interface and its applications.   (CO3)
    b. What are the advantages of Servlets over CGI?   (CO3)

(OR)
11 Explain the life cycle of a Servlet with a neat sketch.   (CO3)

III.B.TECH- II-SEM-II MID EXAMINATION   **Date: Time: 12/06/2024**
10:00-11:30 AM

Subject: WEB TECHNOLOGIES (CS603PC) Branch: Common to CSE   Marks: 25 M

Note: Question paper contains two parts, Part - A and Part - B.

Part-A is compulsory which carries 10 marks. Answer all questions in part-A.

Part-B consists of (2 1/2) units. Answer any one full question from each unit. Each question carries 5 marks and may have a, b, c sub questions.

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PART-A   5X2=10

</div>

1. Develop a servlet that handles an HTTP GET request   (CO3)
2. What is the need of JSP page?   (CO4)
3. Write the differences between JSP and Servlets.   (CO4)
4. What is the scope of variables in java Script?   (CO5)
5. What is Document Object Model?   (CO5)

<div align="center">

PART-B
3X5=15

</div>

6   Define JDBC. Explain JDBC Drivers with a neat diagram.   (CO3)

<div align="center">

(OR)

</div>

7   Write a servlet program to retrieve data from the database.   (CO3)

8   Discuss various implicit objects in JSP with example?   (CO4)

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(OR)

</div>

9   Write a short note about session tracking and explain in detail about different ways of maintaining sessions in JSP (Cookies, Rewriting URLs & form hidden object). (CO4)

10 Write about the following with reference to Java Script with example
    a) Functions   b) Form Validation   (CO4)

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(OR)

</div>

11 How can you define event handler? Explain in detail about different event handlers.
    Write a JavaScript   to demonstrate event handling.   (CO5)

11. SCHEME OF EVALUATION
MID-1

S.NO			Marks allotted	Total Marks
1	a	Definition	2	2
2	a	Explanation	2	2
3	a	Definition	2	2
4	a	Definition and Syntax	1 1	2
5	a	Differences	2	2
6	a	Explanation and program	1.5 1	5
6	b	Program	2.5	
7	a	Explanation and Syntax	1.5 1	5
7	b	Program	2.5	
8	a	Definition and Explanation	1 4	5
9	a	Explanation and Example.	4 1	5
10	a	Explanation	2.5	5
10	b	Advantages of Servlets over CGI?	2.5	
11	a	Explanation and Diagram	3 2	5
		Total Marks		**25**

SCHEME OF EVALUATION
MID-2

Questions Number	Scheme of evaluation	Marks allotted	Total Marks
1	Definition	2	2
2	Definition	2	2
3	Differences	2	2
4	Definition	2	2
5	Definition	2	2
6	Definition and Explanation	5	5
7	Explanation and program	5	5
8	Explanation Syntax	3 2	5
9	Explanation of Sessions Examples	3 2	5
10	a) Explanation of functions b) Validation Definition and example	2 3	5
11	Definition Explanation	2 3	5
	Total Marks		**25**

12. MAPPING OF COs WITH POs AND PSOs

	PO 1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO 1	PSO 2
CO1	2	3	3	2	3	-	-	-	-	-	2	3	3	1
CO2	2	3	3	2	3	-	-	-	-	-	2	3	3	1
CO3	2	3	3	2	3	-	-	-	-	-	2	3	3	2
CO4	2	3	3	2	3	-	-	-	-	-	2	3	3	2
CO5	2	3	3	3	3	-	-	-	-	-	2	3	3	1

13. COS,POS,PSOS JUSTIFICATION

CO1	Understanding the server-side scripting with PHP Language.
CO2	Illustrate the representation of data in XML format and parse the data using the various Java parsers.
CO3	Introduce server-side programming with Java servlets.
CO4	Apply JSP concepts to create dynamic web pages by reducing the code complexities and store data in database.
CO5	Develop appropriate client-side scripting programs using JavaScript and AJAX[Creating] and determine the appropriate web technology and builds web application.
PSO1	**Professional Skills and Foundations of Software development:** Ability to analyze, design and develop applications by adopting the dynamic nature of Software developments.
PSO2	**Applications of Computing and Research Ability**: Ability to use knowledge in cutting edge technologies in identifying research gaps and to render solutions with innovative ideas.

Justification:

CO1: Explain and **Categorize** the Server side scripting and usage of PHP
Correlated with PO1 moderately: Students acquire foundational engineering knowledge in server-side scripting with PHP, covering key concepts such as server-client communication, database interactions, and web server management.
Correlated with PO2 moderately: Students develop problem-solving skills by analyzing and addressing real-world issues in PHP scripting, including debugging code, optimizing queries, and securing applications.
Correlated with PO3 moderately: The course emphasizes designing and developing dynamic web applications, where students create comprehensive solutions by integrating databases, server-side scripts, and web technologies.
Correlated with PO4 moderately: Students learn to investigate and resolve complex issues in server-side scripting, such as performance optimization and security challenges, fostering their analytical and investigative skills.
Correlated with PO5 moderately: Students gain proficiency with modern tools and technologies in web development, including PHP, MySQL, and various frameworks, preparing them to apply contemporary techniques and resources effectively.
Correlated with PO11 moderately: Students learn the basics of project management within the context of web development projects. They gain an understanding of time management, resource allocation, and budgeting when developing and deploying PHP-based applications.
Correlated with PO12 moderately: The dynamic nature of web technologies necessitates continuous learning. This course instills a mindset of life-long learning by encouraging students to stay updated with the latest PHP developments, frameworks, and best practices.
Correlated with PSO1 moderately: Students develop strong professional skills and a solid foundation in software development, gaining comprehensive training in PHP and related tools essential for creating robust and scalable web applications.
Correlated with PSO2 moderately: Students apply their knowledge to practical applications of computing and develop research abilities, focusing on understanding and implementing PHP for real-world web development problems, though this is a secondary focus compared to professional skills.

CO2: Illustrate the representation of data in XML format and parse the data using the various Java parsers.

Correlated with PO1 moderately: Students gain foundational knowledge in data representation and parsing techniques using XML and Java, reinforcing core principles of data handling and software development.

Correlated with PO2 moderately: Students develop analytical skills by solving problems related to XML data parsing and manipulation, including debugging and optimizing parsing algorithms.

Correlated with PO3 moderately: Students design and implement solutions for representing and parsing XML data using Java, focusing on creating efficient and effective parsing strategies.

Correlated with PO4 moderately: Students investigate and address complex issues in XML data parsing, such as handling large data sets and ensuring data integrity, enhancing their problem-solving abilities.

Correlated with PO5 moderately: Students become proficient with modern tools and libraries for XML parsing in Java, such as DOM, SAX, and SAX parsers, preparing them to use contemporary technologies effectively.

Correlated with PO11 moderately: Students acquire basic project management skills by planning and managing projects that involve XML data parsing, focusing on resource allocation, time management, and integration of solutions.

Correlated with PO12 moderately: The course fosters a commitment to life-long learning by encouraging students to keep pace with evolving technologies, tools, and best practices in XML data representation and parsing using Java.

Correlated with PSO1 moderately: Students develop strong professional skills and a solid foundation in software development by learning XML data representation and Java parsing techniques, which are essential for creating robust and scalable applications.

Correlated with PSO2 moderately: While the course involves practical applications of computing through XML data parsing, the focus on research ability is secondary. Students gain foundational knowledge and skills primarily related to professional software development practices.

CO3: Introduce server-side programming with Java servlets.

Correlated with PO1 moderately: Introducing server-side programming with Java servlets provides students with foundational knowledge in server-side technologies, enhancing their understanding of web architecture and backend development.

Correlated with PO2 moderately: Students develop problem-solving skills by addressing challenges in servlet-based server-side programming, such as request handling, session management, and integration with databases.

Correlated with PO3 moderately: The course focuses on designing and developing solutions using Java servlets for handling dynamic web content, including form processing, database connectivity, and server-side validation.
Correlated with PO4 moderately: Students investigate and resolve complex issues in servlet programming, such as concurrency control, scalability, and security considerations, enhancing their analytical abilities.
Correlated with PO5 moderately: Students gain proficiency in using modern tools and frameworks associated with servlet development, enabling them to create efficient and scalable web applications.
Correlated with PO11 moderately: By planning and executing servlet-based projects, students acquire project management skills related to resource allocation, timeline management, and budgeting for server-side development tasks.
Correlated with PO12 moderately: The course encourages life-long learning by exposing students to evolving servlet technologies, best practices, and emerging trends in server-side programming.
Correlated with PSO1 moderately: Students develop professional skills and a solid foundation in software development by mastering Java servlets, essential for building robust and scalable web applications.
Correlated with PSO2 moderately: While the primary focus is on practical applications of servlet programming, students also enhance their research ability in exploring advanced servlet topics and methodologies.

CO4: Apply JSP concepts to create dynamic web pages by reducing the code complexities and store data in database.
Correlated with PO1 moderately: Applying JSP concepts provides students with knowledge of dynamic web page creation and database interaction, enhancing their understanding of server-side web technologies.
Correlated with PO2 moderately: Students develop problem-solving skills by addressing complexities in JSP code, such as managing session data, form handling, and integrating with databases for data storage and retrieval.
Correlated with PO3 moderately: The course focuses on designing and developing solutions using JSP for creating dynamic web pages with reduced code complexities, including MVC architecture, data validation, and database CRUD operations.
Correlated with PO4 moderately: Students investigate and resolve complex issues in JSP programming, such as performance optimization, security considerations, and

scalability when interacting with databases.
Correlated with PO5 moderately: Students gain proficiency in using modern tools and frameworks associated with JSP development, ensuring they can create efficient and scalable dynamic web applications.
Correlated with PO11 moderately: By planning and executing JSP-based projects, students acquire project management skills related to resource allocation, timeline management, and budgeting for dynamic web development tasks.
Correlated with PO12 moderately: The course encourages life-long learning by exposing students to evolving JSP technologies, best practices, and emerging trends in web application development.
Correlated with PSO1 moderately: Students develop professional skills and a solid foundation in software development by mastering JSP concepts and techniques for creating dynamic web applications with database connectivity.
Correlated with PSO2 moderately: While focusing on practical applications of JSP, students also enhance their research ability by exploring advanced JSP topics and methodologies for creating efficient web solutions.

CO5: Develop appropriate client-side scripting programs using JavaScript and AJAX[Creating] and determine the appropriate web technology and builds web application.
Correlated with PO1 moderately: Developing client-side scripting programs with JavaScript and AJAX enhances students' understanding of web technologies, focusing on interactive and responsive web application development.
Correlated with PO2 moderately: Students develop analytical skills by solving complex problems in client-side scripting, including user interface enhancements, asynchronous data retrieval, and error handling using AJAX.
Correlated with PO3 moderately: The course emphasizes designing and implementing solutions using JavaScript and AJAX for creating dynamic and interactive web applications, integrating front-end and back-end functionalities.
Correlated with PO4 moderately: Students investigate and resolve complex issues in client-side scripting, such as optimizing performance, ensuring cross-browser compatibility, and implementing secure data transfer using AJAX.
Correlated with PO5 moderately: Students gain proficiency in using modern tools and libraries associated with JavaScript and AJAX development, enabling them to create efficient and user-friendly web applications.

| **Correlated with PO11 moderately**: By planning and executing web projects that utilize JavaScript and AJAX, students acquire project management skills related to resource allocation, timeline management, and budgeting for web development tasks. |
| **Correlated with PO12 moderately**: The course promotes life-long learning by exposing students to evolving JavaScript frameworks, AJAX methodologies, and best practices in web application development. |
| **Correlated with PSO1 moderately**: Students develop professional skills and a solid foundation in software development by mastering JavaScript and AJAX concepts and techniques for building interactive and responsive web applications. |
| **Correlated with PSO2 moderately**: While focusing on practical applications of JavaScript and AJAX, students enhance their research ability by exploring advanced techniques and methodologies for creating efficient and innovative web solutions. |

Mapping_POs with PEOs

		Program Outcome(PO):											
		1	2	3	4	5	6	7	8	9	10	11	12
PEOS	**I**	X	X										
	II			X	X			X					
	III					X			X				X
	IV						X	X			X	X	

14.   ATTAINMENT OF CO's, PO's and PSOs (Excel sheet)

NA

15.   PREVIOUS YEAR QUESTION PAPERS

R16

Code No: 136EN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2019

WEB TECHNOLOGIES

(Common to CSE, IT)

Time: 3 hours   **Max. Marks: 75**

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B

consists of 5 Units. Answer any one full question from each unit. Each question carries

10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	How do you reverse a string in PHP without using any built in functions?	[2]
b)	What are the storage engines used by MySQL?	[3]
c)	What is Document Object Model?	[2]
d)	How does one link external style sheet in a XHTML document?	[3]
e)	Write the purpose of cookies.	[2]
f)	What is session tracking? Explain.	[3]
g)	List down the advantages of Java beans.	[2]
h)	How JSP page is compiled?	[3]
i)	What is the scope of variables in java script?	[2]
j)	How the keyword „new" is used to create objects in java script?	[3]

PART - B

2.a) Discuss about various functions used in PHP with examples.

  b) Write PHP code to create a login page for a web application. [5+5]

OR

3.a) Discuss about various types of PHP interpreters.

  b) Write a program in PHP to find out length of the string "This is my first program".
[5+
5]

4.a) Explain about XML core tags and flow control tags.

  b) Show how an XML schema can be created. [5+5]

OR

5.a) Explain the advantages of XML schemas over DTDs.

  b) Differentiate between DOM and SAX parsers in java. [5+5]

6.a) What is CGI? List the CGI environmental variables.

  b) Explain the life cycle of a Servlet with a neat sketch. [5+5]

OR

7.a) Discuss the process of deploying a web application.

  b) How to handle http request and responses? Explain. [5+5]

8.a) Write about the components of JSP and explain.

  b) How to connect database connection through JSP? Illustrate with example. [5+5]

OR

9.a) Write in brief about JSP tag extensions and libraries.

  b) How to create and make use of beans in JSP pages? Demonstrate with example.
[5+5]

10.a) Explain about objects, methods and events in java scripts.

b) Write a java script to change text color of HTML elements. [5+5]

OR

11.a) What is the functioning of the java script keyword „this‟ and „dot‟ operator? Explain.

b) Write a java script to validate a form consisting of a hall ticket number as username and mobile number as password. Also navigate to another web page after validation. [5+5]

---ooOoo---

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B

consists of 5 Units. Answer any one full question from each unit. Each question carries

10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)   What are the data types supported by PHP? [2]

b)   List various types of arrays supported by PHP. How to declare arrays in PHP? [3]

c)   Write in brief about XHTML. [2]

d)   What is XML? List characteristic features of XML. [3]

e)   State the differences between GET and POST methods.   [2]

f)   Develop a servlet that handles an HTTP GET request.   [3]

g)   What are JSP Implicit Objects?   [2]

h)   How JSP resolves the problems with Servlets?   [3]

i)   What is Document Object Model?   [2]

j)   Explain the scope of variable.   [3]

PART - B

(50 Marks)

2.a)   Explain database connectivity in PHP with reference to MYSQL.

  b)   How to execute a simple query in PHP? Illustrate.   [5+5]

OR

3.a)   State the rules for declaring variables in PHP.

  b)   Write a PHP program for a simple calculator.   [3+7]

4.a)   What is XML Schema? State its purpose and list its advantages over DTD

  b)   Describe XML schema for designing a Web page as an illustration.   [3+7]

OR

5.a)   What is a 'XML Parser'?

  b)   Explain in detail how XML data is parsed with an example.   [2+8]

6.a)   What are the advantages of Servlets over CGI?

  b) What is a 'servlet'? Explain the life cycle of a servlet with an example servletprogram.
                                                                            [4+6]

OR

7.a)   Demonstrate the use of cookies in servlets with an example.

  b)   Write a servlet program to retrieve data from the database.   [4+6]

8.a)   How to declare and use variables in JavaScript?

b) What are JSP Code snippets? Develop a JSP program to display current date antime.[3+7]

OR

9.a) Write in very brief about JSP processing.

b) How to access a database from a JSP? Explain in detail. [2+8]

10.a) How is Client side Java Script different from Server side Java Script?

b) Write a simple AJAX application. [3+7]

OR

11.a) What is JavaScript? What are the features of JavaScript?

b) Write a JavaScript to display whether given number is a prime or not. [3+7]

---ooOoo---

Code No.: CS603PC

CMR ENGINEERING COLLEGE:: HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Regular) - May- 2023
WEB TECHNOLOGIES
(Common for CSE, IT, CSD)

[Time: 3 Hours]   [Max. Marks: 70]

Note: This question paper contains two parts A and B.
   Part A is compulsory which carries 20 marks. Answer all questions in Part A.
   Part B consists of 5 Units. Answer any one full question from each unit. Each question
   carries 10 marks and may have a, b, c as sub questions.

PART-A   (20 Marks)

1. a) Define function in PHP with an example.   [2M]
   b) PHP is better than Servlets. Justify?   [2M]
   c) Write the different types of tags used in XML.   [2M]
   d) List out the common tags used in HTML to create a table.   [2M]
   e) Write the disadvantages of Servlets.   [2M]
   f) What are the steps involved to connect a database in JDBC.   [2M]
   g) Define JSP code snippets.   [2M]
   h) Define session tracking in JSP.   [2M]
   i) State client-side scripting language.   [2M]
   j) Differentiate between onClick and onSubmit event.   [2M]

PART-B   (50 Marks)

2. Explain read and write file operation in PHP.   [10M]

OR

3. a) Explain the various file handling methods using PHP.   [5M]
   b) Explain different types of arrays used in PHP with examples. [5M]

4. a) Explain the working of XML processors in detail and also mention the purpose of XML   [5M]
      processors.
   b) Define an XML schema. Show how an XML schema can be created. [5M]

OR

5. Define SAX. Explain how SAX parses the XML file.   [10M]

6. Define servlets? Write a servlet program to display " I AM CMRite".   [10M]

OR

7. Describe HttpSessionBindingListener interface.   [10M]

8. Discuss various implicit objects in JSP.   [10M]

OR

9. Develop a JSP to keep the track number of users and display a message "You are nth   [10M]
   visitor" where n is number of a user.

10. Describe various methods to include CSS into a webpage.   [10M]

OR

11. a) Explain the primitive data types in JavaScript.   [5M]
    b) Explain how a switch-case statement is used in JavaScript with an example.   [5M]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, January/February - 2023
WEB TECHNOLOGIES
(Common to CSE, CSBS)

Time: 3 Hours
Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks
and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	List any two advantages of PHP.	[2]
b)	Explain the various types of arrays supported by PHP.	[3]
c)	What is XHTML?	[2]
d)	Explain the features of XML.	[3]
e)	Enumerate the differences between a servlet and an Applet.	[2]
f)	Explain the uses of Servlets.	[3]
g)	What is the need of JSP page?	[2]
h)	Explain the JSP expression using an example.	[3]
i)	What is the scope of variables in java Script?	[2]
j)	Explain the use of "this" operator in Java Script.	[3]

PART – B

(50 Marks)

2.a)	With example, explain the different control structures used in PHP.	
b)	Explain the execution of queries in PHP.	[5+5]

OR

3.	In detail, explain the various file handling operations in PHP.	[10]

4.a)	Define Document Type Definition (DTD) in XML. What is difference between internal and External DTD?	
b)	Give an overview of defining basic XML tags.	[5+5]

OR

5.a)	Explain the advantages of XML schemas over DTDs.	
b)	Differentiate between DOM and SAX parsers in java.	[5+5]

6.a)	Present an overview of the servlet API.	
b)	Explain with suitable example how servlet handle: i) HTTP get requests ii) HTTP post requests.	[5+5]

OR

7.a)	Enumerate the differences between single threaded and multithreaded Servlet method.	
b)	What are sessions? How do you enable and disable sessions using JSP?	[5+5]

Code No.: CS603PC

R20   H.T.No. [ ][ ][8][R][ ][ ][ ][ ]

CMR ENGINEERING COLLEGE : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Supply) - January– 2024
WEB TECHNOLOGIES
(Common for CSE, IT, CSD)

[Time: 3 Hours]   [Max. Marks: 70]

Note: This question paper contains two parts A and B.
      Part A is compulsory which carries 20 marks. Answer all questions in Part A.
      Part B consists of 5 Units. Answer any one full question from each unit. Each question
      carries 10 marks and may have a, b, c as sub questions.

PART-A   (20 Marks)

1. a)	What are the various operators supported by PHP?	[2M]
b)	What are the common uses of PHP?	[2M]
c)	Mention the need for cascading style sheets.	[2M]
d)	List the rules to define tags in XML.	[2M]
e)	How is servlet different from an applet?	[2M]
f)	Name two CGI environmental variables.	[2M]
g)	How to deal with syntax errors in JSP page?	[2M]
h)	How JSP resolves the problems with servlets?	[2M]
i)	What is the scope of variables in javascript?	[2M]
j)	Differentiate between JavaScript and Servlets.	[2M]

PART-B   (50 Marks)

2.a)	Explain the user defined functions in PHP with an example	[5M]
b)	Write a PHP program for create table and inserting values into that table using database	[5M]

OR

3.a)	Write a PHP program that gives the number of occurrences of the expression in a string using functions.	[5M]
b)	Create a PHP program to print sum of digits	[5M]

4.a)	Define the term XML schema. With an example, explain XML document and the formation of an XML schema file.	[5M]
b)	How XML documents are parsed using SAX.	[5M]

OR

5.a)	Explain different types of cascading style sheets with suitable examples.	[5M]
b)	Compare XML and HTML.	[5M]

6.a)	Develop a servlet that illustrates use of cookies.	[5M]
b)	Write a servlet program to represent session tracking.	[5M]

OR

7.a)	Explain in detail the process of building and testing a simple servlet that displays HELLO! in bold type in the browser display area.	[5M]
b)	What is JDBC? What are various drivers of JDBC.	[5M]

8.a)	What are the advantages of JSP over servlets?	[5M]
b)	Briefly discuss different components in JSP page by considering an example.	[5M]

OR

9.a)	Write a JSP program to insert and view employee details of a company.	[5M]
b)	Write the JSP code for finding a factorial of a number.	[5M]

16.   POWER POINT PRESENTATIONS (PPTs)

JSP
Java Server Pages

servlets
- Server side Java programs
- Solve scalability issue
- serlvets are run on threads of execution not separate processes
- Solve portability issue
- runs on every platform that supports Java
- supported by all most popular web servers
- Issues:
- html tags are embedded in java programs within out.print() statements

JSP -- Introduction
- server-side technology
- separates dynamic content from static content of a page
  - *Java scriptlets embedded into html-like page*
- Separates the work of
  - java programmers
  - page authors

Introduction
- **Java Server Pages (JSP) technology provides a simplified, fast way to create web pages that display dynamically-generated content**
- **Developed by Sun Micro Systems in 1999.**
- **Defines interaction between the server and JSP and describes the format and syntax of the page.**

JSP page
- **A page created by the web developer that includes JSP technology-specific and custom tags, in combination with other static (HTML or XML) tags.**
- **A JSP page has the extension .jsp or .jspx;**
- **This signals to the web server that the JSP engine will process elements on this page.**
- **Using the .xml deployment descriptor, additional extensions can be associated with the JSP engine.**

Advantages of JSP
- Provides a powerful and flexible mechanism to produce dynamic web pages.
- It allows the creation of custom tag libraries to meet the specific needs of the project.
- It provides built-in support of HTTP session management.
- Can be integrated with : JDBC API, Thread API, EJB API etc..

JSP notations
- <% … %> jsp scriplet ◊   a fragment of code that run when the user request the webpage.
- < %= > delimeter used for expressions
- <%@ > jsp directives

Anatomy of a   jsp page
```
<%@page contenttype = "text/html" language = "java"%>
<%@page import = "java.util.Date"  session  = "false"%>      Jsp elements

%@ is jsp directive

<html>
<head>
<title> simple jsp page demo</title>
</head>                                               Template data
<body>
<h3> current time is : </h3>

<%= new Date()%>    --> jsp elements
%= is jsp element
</body>
</html>           Template data
```

In a simple way
```
<HTML>
  <BODY>
    Hello!  The time is now <%= new   java.util.Date() %>
  </BODY>
</HTML>
```

Client and Server with JSP

Java Server Pages (JSP) in   detail

JSP Life   cycle

17. Innovative Teaching Methods If Any (Attached Innovative Assignment)

1. Code implementation for developing a simple JSP Web application.

2. Implementation of Cookies by using Servlets and JSP.

18. References (Textbook/Websites/Journals)

WEBSITES

1. www.Wikipedia/web technologies.com

2. www.w3cschool.com

3. www.sun.java.com

4. www.javatpoint.com

5. https://www.tutorialrepublic.com

JOURNALS

1. Emerging Technologies in Web Intelligence .

2. International Journal of Web Engineering and Technology Using Provenance in the Semantic Web.