



Estd. 2001

Sri Indu

College of Engineering & Technology

UGC Autonomous Institution

Recognized under 2(f) & 12(B) of UGC Act 1956,

NAAC, Approved by AICTE &

Permanently Affiliated to JNTUH



NAAC
NATIONAL ASSESSMENT AND
ACCREDITATION COUNCIL



HANDOUT

III Year II Semester

DEPARTMENT OF ARTIFICIAL
INTELLIGENCE AND DATA SCIENCE

ACADEMIC YEAR 2026-2026



SRIINDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

(Permanently Affiliated to JNTUH, Approved by AICTE, New Delhi and Accredited by NBA, NAAC)
Sheriguda Village, Ibrahimpatnam Mandal, Ranga Reddy Dist. – 501 510

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

HANDOUT- INDEX

S. No	Contents
1	Vision, Mission, PEOs, POs, PSOs & Cos
2	Institution Academic Calendar
3	Department Academic Calendar
4	Subject wise
i)	Syllabus Copy
ii)	Lesson Plan
iii)	Question Bank
iv)	End Examination Questions (Model Paper)
v)	Mid-1 & Mid-2 Questions (Model Paper)



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

B. TECH –COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

INSTITUTION VISION

To be a premier Institution in Engineering & Technology and Management with competency, values and social consciousness.

INSTITUTION MISSION

- IM₁** Provide high quality academic programs, training activities and research facilities.
- IM₂** Promote Continuous Industry-Institute Interaction for Employability, Entrepreneurship, Leadership and Research aptitude among stakeholders.
- IM₃** Contribute to the Economical and technological development of the region, state and nation.

DEPARTMENT VISION

To produce competent professionals recognized for excellence, innovation and societal relevance by impacting their knowledge of Artificial Intelligence and Data Science.

DEPARTMENT MISSION

The Department has following Missions:

- DM₁** To produce industry-ready professionals and leverage Artificial Intelligence and Data science
- DM₂** To provide a conducive environment towards innovation and skills.
- DM₃** To involve in activities that provide social and professional solutions.
- DM₄** To impart training on emerging technologies namely cloud computing and IOT with involvement of stake holders.

Program Educational Objectives (PEOs)

PEOs	Description
PEO 1	Comply with the contemporary trends and best practices of industry and research standards of Artificial Intelligence and Data Science
PEO 2	Develop Artificial Intelligence and Data Science based solutions to address diverse needs of the community for improving the quality of life and environment.
PEO 3	To produce creative and technically strong engineers with research pioneering solutions to meet global challenges
PEO 4	Inculcate values of professional ethics, social concerns, environment protection and life-long learning.

Program Outcomes (POs)

POs	Description
PO 1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 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.
PO 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.
PO 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.
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO 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.
PO 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.
PO 8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 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.
PO 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.
PO 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.

Program Specific Outcomes (PSOs)

PEOs	Description
PSO1	Adapt, contribute and innovate new technologies in the key domains of Artificial Intelligence & Data Science during higher studies / product development
PSO 2	To equip students with interdisciplinary skill sets to be able to build an intelligent system which in turn provides dynamic and promising careers in the global marketplace.
PSO 3	Utilize Artificial Intelligence and Data Science tools to provide innovative business solutions.



Lr.No.SICET/AUTO/DAE/III B.Tech Academic Calendar/29/2025

B.TECH III-YEAR I-SEM & II-SEM ACADEMIC CALENDAR
(FOR ACADEMIC YEAR : 2025-26)

Academic Calendar for B.Tech – IIIrd Year Students (2023 - 24 Batch), BR-22 Regulation.

I – Semester

S.No.	EVENT	PERIOD	DURATION
1.	Commencement of class work.	14.07.2025 (Monday)	
2.	1 st Spell of Instructions for covering First Two and a half Units.	14.07.2025 – 13.09.2025	9 Weeks
3.	CRT Classes	15.09.2025 – 07.10.2025	2 Weeks 2 Days
4.	I Mid Term Examinations.	08.10.2025 – 10.10.2025	3 Days
5.	Submission of I Mid Term Examination Marks.	16.10.2025	
6.	2 nd Spell of Instructions for Remaining Two and a half Units.	13.10.2025 – 13.12.2025	9 Weeks
7.	II Mid Term Examinations.	15.12.2025 – 17.12.2025	3 Days
8.	Preparation Holidays and Practical Examinations	18.12.2025 – 27.12.2025	1 Week
9.	Submission of II Mid Term Examination Marks.	23.12.2025	
10.	I Semester End Examinations.	29.12.2025 – 10.01.2026	2 Weeks
Commencement of Class-Work for III B.Tech - II Semester 19.01.2026			

Note: No of Working/Instructional days : 90

II – Semester

S.No.	EVENT	PERIOD	DURATION
1.	Commencement of class work.	19.01.2026 (Monday)	
2.	1 st Spell of Instructions for covering First Two and a half Units.	19.01.2026 – 14.03.2026	8 Weeks
3.	I Mid Term Examinations.	16.03.2026 – 18.03.2026	3 Days
4.	Submission of I Mid Term Examination Marks.	24.03.2026	
5.	2 nd Spell of Instructions for Remaining Two and a half Units.	20.03.2026 – 09.05.2026	7 Weeks
6.	Continuation of remaining 2 nd Spell of Instructions	25.05.2026 – 10.06.2026	2 Weeks
7.	II Mid Term Examinations.	11.06.2026 – 13.06.2026	3 Days
8.	Preparation Holidays and Project Evaluation.	15.06.2026 – 20.06.2026	1 Week
9.	Submission of II Mid Term Examination Marks.	18.06.2026	
10.	II Semester End Examinations	22.06.2026 – 04.07.2026	2 Weeks

Note: No of Working/Instructional days : 93

ACE

CE

DIRECTOR

PRINCIPAL

Controller of Examination
Sri Indu College of Engineering & Technology
(An Autonomous Institution Under UGC)
Shiriguda (V), Ibrahimpatnam, R.R. Dist-501510

DIRECTOR
Sri Indu College of Engineering & Technology
(An Autonomous Institution Under UGC)
Shiriguda (V), Ibrahimpatnam, R.R. Dist-501510.

PRINCIPAL
Sri Indu College of Engineering & Technology
(An Autonomous Institution Under UGC)
Shiriguda (V), Ibrahimpatnam, R.R. Dist-501510

Sign:

Dr. M.V.S.S. Giridhar
Prof. of CEA; JNTUH Nominee

Sign:

Dr. T. Venu Gopal
Prof. of CSE; JNTUH Nominee

Sign:

Dr. D. Ramesh
Prof. of CSE; JNTUH Nominee

(Copy to DAP&E and Copy to all the Dept. Heads)

Information Technology Essentials

SYLLABUS

BR22 – B.TECH. – COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution under UGC, New Delhi)

B.Tech. - III Year – II Semester

OPEN ELECTIVE- I

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(R22INF3235) Information Technology Essentials

UNIT I: Web Essentials - Creating a Website - Working principle of a Website - Browser fundamentals - Authoring tools - Types of servers: Application Server - Web Server – Database Server – HTML basics – HTML tags and their use

UNIT II: Scripting Essentials - Need for Scripting languages - Types of scripting languages - Client side scripting - Server side scripting - PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - PHP and HTML - Cookies – Sessions - Authentication – Introduction to JavaScript

UNIT III: Database Essentials - Database management - Database terms - MySQL - commands – Data types – Indexes – Functions – Accessing MySQL using PHP.

UNIT IV: Networking Essentials - Fundamental computer network concepts - Types of computer networks - Network layers - TCP/IP model - Wireless Local Area Network - Ethernet - WiFi - Network Routing - Switching - Network components

UNIT V: Application Essentials - Creation of simple interactive applications - Simple database applications - Multimedia applications - Design and development of information systems – Personal Information System – Information retrieval system – Social networking applications

TEXT BOOKS:

1. Robin Nixon, "Learning PHP, MySQL, JavaScript, CSS & HTML5" Third Edition, O'REILLY, 2014.
2. James F. Kurose, "Computer Networking: A Top-Down Approach", Sixth Edition, Pearson, 2012.

REFERENCES:

1. GottapuSasibhushanaRao, "Mobile Cellular Communication", Pearson, 2012.
2. R. Kelly Rainer, Casey G. Cegielski, Brad Prince, Introduction to Information Systems, Fifth Edition, Wiley Publication, 2014.
3. it-ebooks.org



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
LESSON PLAN
(Regulation :R22)
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Prepared on
Jan'
2026

	Sub. Code & Title	R22INF3235 - Information Technology Essentials		
	Academic Year: 2026-26	Year/Sem.	III/II	
	Faculty Name & Designation	P.SOUJANYA Asst. proessorf		

Unit/ Item No.	Topic (s)	Book Referenc e	Page (s)		Teaching Methodolo gy	Propo sed No. of Period s	Actual Date of Handled	CO/RBT
			From	To				
Unit/ Item No.	Topic (s)	Book Referenc e	UNIT-I (Web Essentials) Page (s)		Teaching Methodolo gy	Propose d No. of Periods	Actual Date of Handl ed	10 CO/RB T
1.1	Introduction	T1	3	6	Black Board			CO1,RB1
1.2	Creating a Website	T1	From 18	To 19	Black Board	01		CO1,RB2
			UNIT-II					16
1.3	Working principle of a Website	T1	19	20	Black Board	01		CO1,RB2
2.1	Need for Scripting languages	T1	81	95	Black Board	01		CO2,RB
1.4	Browser fundamentals	T1	13	16	Black Board	01		CO1,RB2
2.2	Types of scripting languages	T1	96	112	Black Board	01		CO2,RB
1.5	Authoring tools	T1	30	33	Black Board	02		CO1,RB2
2.3	Client side scripting	T1	113	130	Black Board	01		CO2,RB
1.6	Types of servers:	T1	34	48	Black Board	01		CO2,RB
2.4	Server side scripting	T1	131	150	Black Board	02		CO2,RB
2.5	Web Server	T1	49	52	Black Board	01		CO2,RB
1.7	PHP	T1	151	160	Black Board	01		CO2,RB
2.6	Database Server	T1	55	58	Black Board	01		CO2,RB
1.8	Working principle of PHP	T1	161	172	Black Board	01		CO2,RB
1.9	PHP Variables- Constants-	T1	59	64	Black Board	01		CO1,RB
2.7	Operators	T1	173	180	Black Board	01		CO1,RB
1.10	HTML tags and their use	T1	65	80	Black Board	02		CO1,RB1
2.8	Flow Control and Looping	T1	181	190	Black Board	01		CO2,RB
2.9	Arrays - Strings - Functions	T1	191	199	Black Board	01		CO2,RB
2.10	Review		Signature of the HOD/Coordinator					CO2,RB
	File Handling	T1	200	205	Black Board	01		5

2.11	PHP and HTML - Cookies	T1	206	209	Black Board	01		CO2,RB 4
2.12	Sessions - Authentication	T1	210	216	Black Board	01		CO2,RB 4
2.13	Introduction to JavaScript	T1	217	224	Black Board	01		CO2,RB 5
Review		Signature of the HOD/Coordinator						

	SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY LESSON PLAN (Regulation :R22) DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE		Prepared on Jan' 2026	
	Sub. Code & Title		R22INF3235 - Information Technology Essentials	
	Academic Year: 2026-26		Year/Sem.	III/II
	Faculty Name & Designation		P.SOUJANYA Asst. proessor	

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	Faculty Name & Designation		P.SOUJANYA Asst. proessor	

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodolog y	Propose d No. of Periods	Actual Date of Handle d	CO/RB T
			From	To				
UNIT-III (Database Essentials)11								
3.1	Database management	T1	225	227	Black Board	01		CO3,RB1
3.2	Database terms	T1	227	229	Black Board	01		CO3,RB3
3.3	MySQL	T1	231	234	Black Board	01		CO3,RB2
3.4	Commands	T1	234	239	Black Board	01		CO3,RB1
3.5	Data types	T1	239	244	Black Board	02		CO3,RB4
3.6	Indexes	T1	245	252	Black Board	01		CO3,RB1
3.7	Functions	T1	253	279	Black Board	02		CO2,RB2
3.8	Accessing MySQL using PHP	T1	280	316	Black Board	02		CO3,RB2
	Review	Signature of the HOD/Coordinator						

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Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodolog y	Propose d No. of Periods	Actual Date of Handle d	CO/RB T
			From	To				
UNIT-IV					11			
(Networking Essentials)								
4.1	Fundamental computer network concepts	T1	318	320	Black Board	01		CO4,RB2
4.2	Types of computer networks	T1	322	324	Black Board	01		CO4,RB1
4.3	Network layers	T1	324	328	Black Board	01		CO4,RB2
4.4	TCP/IP model	T1	328	337	Black Board	01		CO4,RB2
4.5	Wireless Local Area Network	T1	338	349	Black Board	01		CO4,RB4
4.6	Ethernet	T1	350	361	Black Board	01		CO4,RB2
4.7	WiFi	T1	361	372	Black Board	01		CO4,RB5
4.8	Network Routing	T1	373	380	Black Board	02		CO4,RB3
4.9	Switching	T1	380	387	Black Board	01		CO4,RB3
4.10	Network components	T1	388	398	Black Board	01		CO4,RB3
	Review	Signature of the HOD/Coordinator						



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
LESSON PLAN
(Regulation :R22)
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

**Prepared
on
Jan' 2026**

Sub. Code & Title	R22INF3235 - Information Technology Essentials		
Academic Year: 2026-26	Year/Sem.	II/II	
Faculty Name & Designation	P.SOUJANYA Asst. proessor		

LIST OF TEXT BOOKS AND REFERENCES

TEXT BOOKS:

1. Robin Nixon, "Learning PHP, MySQL, JavaScript, CSS & HTML5" Third Edition, O'REILLY, 2014.
2. James F. Kurose, "Computer Networking: A Top-Down Approach", Sixth Edition, Pearson, 2012.

REFERENCES:

1. GottapuSasibhushanaRao, "Mobile Cellular Communication", Pearson, 2012.

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
UNIT-V (Application Essentials)10								
5.1	Creation of simple interactive applications	T1	399	420	Black Board	01		CO5,RB2
5.2	Simple database applications	T1	421	433	Black Board	01		CO6,RB1
5.3	Multimedia applications	T1	432	444	Black Board	01		CO5,RB3
5.4	Design and development of information systems	T1	451	456	Black Board	02		CO6,RB3
5.5	Personal Information System	T1	461	463	Black Board	01		CO5,RB3
5.6	Information retrieval system	T1	471	478	Black Board	02		CO5,RB4
5.7	Social networking applications	T1	479	482	Black Board	02		CO5,RB2
	Review	Signature of the HOD/Coordinator						

2. Ily Rainer , Casey G. Cegielski , Brad Prince, Introduction to Information Systems, Fifth Edition, Wiley Publication, 2014. 3. it-ebooks.org

	SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY LESSON PLAN (Regulation :R22) DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE			Prepared on Jan' 2026
	Sub. Code & Title		R22INF3235 - Information Technology Essentials	
	Academic Year: 2026-26		Year/Sem.	III/II
	Faculty Name & Designation		P.SOUJANYA & Asst. proessor	

ASSIGNMENT QUESTIONS

Question no.	Question	RBT Level	COs
Batch 1 (Roll Number: 23D41A7202-23D41A7208)			
1.	Describe the procedure to create a website.	K1	C325.1
2.	Develop a website which illustrates the significance of “frame” tag.	K5	C325.1
3	What are the types of scripting languages and explain it.	K1	C325.2
4.	Explain how you can create a web-based application using XAMPP. Give all the steps required in detail.	K2	C325.2
5.	Explain about functions.	K2	C325.3
Batch 2 (Roll No: 23D41A7209-23D41A7213)			
1.	Explain the Database Queries.	K2	C325.1
2.	Describe about Arithmetic operators and its operations.	K1	C325.1
3	Write a Javascript program to count the number of unique alphabets present in a given string.	K2	C325.2
4	Design a simple web page consists of tables and images.	K5	C325.2
5	Explain the following in brief. A) Domain B) IP Address C) DNS	K2	C325.3
Batch 3 (Roll No: 23D41A7214-23D41A7218)			
1.	Discuss the design issues suggested by Jean Kaiser.	K2	C325.1

Question no.	Question	Marks	RBT Level	COs
Batch 1 (Roll Number: 23D41A3301-23D41A3305)				
1.	Describe the procedure to create a website.	5	K1	C325.1
2.	Develop a website which illustrates the significance of “frame” tag.	5	K5	C325.1
3	What are the types of scripting languages and explain it.	5	K1	C325.2
4.	Explain how you can create a web-based application using XAMPP. Give all the steps required in detail.	5	K2	C325.2
5.	Explain about functions.	5	K2	C325.3
Batch 2 (Roll No: 23D41A3306-23D41A3310)				
1.	Explain the Database Queries.	5	K2	C325.1
2.	Describe about Arithmetic operators and its operations.	5	K1	C325.1
3	Write a Javascript program to count the number of unique alphabets present in a given string.	5	K2	C325.2
4	Design a simple web page consists of tables and images.	5	K5	C325.2
5	Explain the following in brief. A. Domain B. IP Address C. DNS	5	K2	C325.3
Batch 3 (Roll No: 23D41A3311-23D41A3315)				
1.	Discuss the design issues suggested by Jean Kaiser.	5	K2	C325.1
2.	State the following. HTTP cache control and HTTP response.	5	K2	C325.1
3	Write PHP program to print whether current year is leap	5	K1	C325.2
4	Design a form that offers choices to the users to select country names. Depending upon the name selected map image of country should be displayed on the same window and the capital of the country in the text format should be displayed near the image.	5	K5	C325.2
5	Explain the following commands with examples. a. SELECT b. SELECT COUNT c. SELECT DISTINCT	5	K2	C325.3
Batch 4 (Roll No: 23D41A3316-23D41A320)				
1.	Explain the importance of authoring tools	5	K2	C325.1
2.	Define Structured Query language and explain it.	5	K1	C325.1
3	Explain the process of client server communication requests	5	K2	C325.2
4	Develop PHP script to display Fibonacci of length. 5	5	K5	C325.2
5	Explain Data Base Management.	5	K2	C325.3
Batch 5 (Roll No: 23D41A3321-23D41A3325)				
1.	What is normalization? Explain about normal forms.	5	K2	C325.1
2.	Point out some bad examples of website designing	5	K2	C325.1
3	Develop a web page which consists of tables and lists.	5	K5	C325.2

4	How access the element from an array? Give a suitable example	5	K2	C325.2
5	What are the benefits of using PHP and MySQL.	5	K1	C325.3
Batch 6 (Roll No: 23D41A3326-23D41A3330)				
1.	Explain following Commands • UPDATE — • DELETE — • INSERT INTO • CREATE DATABASE • ALTER DATABASE • CREATE TABLE • ALTER TABLE	5	K2	C325.1
2.	How access the element from an array? Give a suitable example.	5	K1	C325.1
3	Explain the working principle of PHP along with its installation method.	5	K2	C325.2
4	Design a simple web page consists of tables and images.	5	K5	C325.2
5	Explain the following statement. a. Networking b. User Interface	5	K2	C325.3
Batch 7 (Roll No: 23D41A3331-23D41A3335)				
1.	What do you meant by enhancement of Website?	5	K1	C325.1
2.	Describe about the functions define by Web Browser.	5	K2	C325.1
3	Summarize in brief about arrays in PHP with suitable examples Develop a web page which consists of Arrays and Functions.	5	K5	C325.2
4	Explain the various functions methods with an example.	5	K2	C325.2
5	Explain about MYSQL.	5	K2	C325.3
Batch 8 (Roll No: 23D41A3336-23D41A3340)				
1.	Explain database management?	5	K2	C325.1
2.	Describe about arithmetic operators and its operations?	5	K1	C325.1
3	Develop a web based application using XAMPP. Give all the steps required in detail.	5	K5	C325.2
4	Explain the following in brief. a. domain b. IP Address c. DNS	5	K2	C325.2
5	Explain the process of client server communication requests	5	K2	C325.3
Batch 9 (Roll No: 23D41A3341-23D41A3345)				
1.	Discuss the design issues suggested by Jean Kaiser.	5	K2	C325.1
2.	Design a simple web page consists of tables and images.	5	K5	C325.1
3	Write a java script program to count the number of unique alphabets present in a given string.	5	K1	C325.2
4	State the following: a. HTTP cache control b. HTTP response	5	K2	C325.2
5	Explain about functions.	5	K2	C325.3
Batch 10 (Roll No: 23D41A3346-23D41A3350)				
1.	Explain about database queries.	5	K2	C325.1
2.	What are the benefits of using PHP and MYSQL?	5	K1	C325.1
3	Explain the working principle of PHP along with its installation	5	K2	C325.2

	methods.			
4	Explain the following statements. Networking User interface	5	K2	C325.2
5	Write PHP program to print whether current year is leap year or not.	5	K5	C325.3
Batch 11 (Roll No: 23D41A3351-23D41A3358)				
1.	Explain Structured Query language.	5	K2	C325.1
2.	How access the element from an array? Give a suitable example.	5	K1	C325.1
3	Explain various joins.	5	K2	C325.2
4.	What do you meant by enhancement of Website? Write PHP script to display Fibonacci of length.	5	K4	C325.2
5.	Explain the importance of authoring tools.	5	K2	C325.3
Batch 12 (Roll No: 23D41A3359-23D41A3363)				
1.	Explain the significance of GET and POST requests.	5	K2	C325.1
2.	Point out some bad examples of website designing.	5	K2	C325.1
3	Design a form that offers choices to the users to select country names. Depending upon the name selected map image of country should be displayed on the same window and the capital of the country in the text format should be displayed near the image.	5	K5	C325.2
4	What do you meant by enhancement of Website?	5	K1	C325.2
5	Explain the difference between database and table?	5	K2	C325.3

	SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE	
	Sub. Code & Name	R22INF3235 & INFORMATION TECHNOLOGY ESSENTIALS
Year/Sem.:	IIIEAR	II SEMESTER
ASSIGNMENT-II	A.Y:2025-26	LAST DATE : 01-06-2026

ASSIGNMENT QUESTIONS

Question no.	Question	RBT Level	COs
Batch 1 (Roll Number: 23D41A7202-23D41A7208)			
1	What is normalization? what are different types of normalization?	L2	CO3
2	Briefly discuss about the TCP/IP Protocol?	L1	CO4
3	Explain packet switching in detail?	L1	CO4
4	Explain the steps for creating simple interactive applications?	L2	CO5
5	Explain the characteristics of Information systems?	L2	CO5
Batch 2 (Roll No: 23D41A7209-23D41A7213)			
1	Explain about database functions?	L2	CO3
2	Describe about the WIFI, Ethernet and LAN?	L2	CO4
3	Draw the IPv4 header format and explain it in detail?	L1	CO4
4	Discuss the issues of social networking applications?	L4	CO4
5	Discuss multimedia application?	L2	CO5
Batch 3 (Roll No: 23D41A7214-23D41A7218)			

1	Summarize Various Indexes of database?	L2	CO3
2	Describe the various network topologies in details?	L3	CO4
3	Differentiate Routing and switching?	L2	CO4
4	Explain the types of social networking applications?	L2	CO5
5	Discuss database applications?	L2	CO5
Batch 4 (Roll No: 23D41A7219-23D41A7223)			
1	Explain following Commands a.Update b. delete c. insert into	L2	CO3
2	Point out the network components available?	L2	CO4
3	Discuss about the Firewall and modem?	L3	CO4
4	Write down the features of social networking applications?	L2	CO5
5	What is information system? Explain the steps involved in design and development of Information Security?	L2	CO5
Batch 5 (Roll No: 23D41A7224-23D41A7228)			
1	Explain about database functions?	L1I	CO3
2	Write the differences between packet switching and circuit switching and explain packet switching in detail?	L3	CO4
3	State the difference between WLAN and WAN?	L2	CO4
4	Discuss multimedia application?	L2	CO5
5	What is information system? Explain the steps involved in design and development of Information Security?	L2	CO5
Batch 6 (Roll No:23D41A7229-23D41A7233)			
1	Describe detail about Data Types in database?	LI	CO3
2	Examine the Transport Layer and Application Layer?	L2	CO4
3	What are the services provided by DNS server? Explain in detail?	L2	CO4
4	What is data independence?	L2	CO5
5	Write down the features of social networking application?	L2	CO5
Batch 7 (Roll No: 23D41A7234-23D41A7238)			
1	Explain different types of database management systems?	L2	CO3
2	Explain the Data link, Physical and Networks Layers in OSI model?	L2	CO4
3	Describe the various network topologies in details?	L3	CO4

4	Discuss the issues of social networking applications?	L2	CO5
5	Explain any three types of data model along with its advantages and disadvantages?	L2	CO5
Batch 8 (Roll No: 23D41A7239-23D41A7243)			
1	Explain about database functions?	II	CO3
2	Explain packet switching in detail?	L1	CO4
3	Point out the network components available?	L2	CO4
4	Write down the features of social networking applications?	L2	CO5
5	Discuss multimedia application?	L2	CO5
Batch 9 (Roll No: 23D41A7244-23D41A7248)			
1	Describe functions in database?	II	CO3
2	Describe the various network topologies in details?	L3	CO4
3	Draw the IPv4 header format and explain it in detail?	L1	CO4
4	Explain the types of social networking applications?	L2	CO5
5	Explain the characteristics of Information systems?	L2	CO5
Batch 10 (Roll No: 23D41A7249-23D41A7253)			
1	Explain different types of database management systems?	II	CO3
2	Explain the Data link, Physical and Networks Layers in OSI model?	L2	CO4
3	Describe the various network topologies in details?	L3	CO4
4	Discuss the issues of social networking applications?	L2	CO5
5	What is an Information Retrieval System? Explain its purpose with advantages and disadvantages?	L2	CO5
Batch 11 (Roll No:23D41A7254-23D41A7258)			
1	Describe detail about Data Types ?	II	CO3
2	Examine the Transport Layer and Application Layer?	L2	CO4
3	What are the services provided by DNS server? Explain in detail?	L2	CO4
4	What is data independence?	L2	CO5
5	Write down the features of social networking application?	L2	CO5
Batch 12 (Roll No: 23D41A7259-23D41A7263)			

1	Explain about database functions?	L2	CO3
2	Point out the network components available?	L2	CO4
3	Explain packet switching in detail?	L1	CO4
4	What is information system? Explain the steps involved in design and development of Information Security?	L2	CO5
5	Discuss multimedia application?	L2	CO5

Batch 13 (Roll No: 24D45A7201- 24D41A7204)

1	Explain different types of database management systems?	II	CO3
2	What are the services provided by DNS server? Explain in detail?	L2	CO4
3	Examine the Transport Layer and Application Layer?	L2	CO4
4	Explain the role of event handling in interactive application?		CO5
5	Explain the characteristics of Information systems?	L2	CO5

QUESTION BANK



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
LESSON PLAN
(Regulation :R22)
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Prepared on Jan' 2026

Sub. Code & Title	R22INF3235 - Information Technology Essentials		
Academic Year: 2026-26	Year/Sem.	III/II	
Faculty Name & Designation	P.SOUJANYA & Asst. proessor		

QUESTIONBANK WITH BLOOMSTAXONOMYLEVEL (BTL)

(1.REMEMBERING 2 .UNDERSTANDING3.APPLYING4.ANALYSING5.EVALUATING 6.CREATING)

UNIT-1 WEB ESSENTIALS			
S.no	Multiple choice Questions	BT Level	Course Outcome
1C-1	Which of the following is a key component of a website's front-end? D) PHP E) Python F) HTML G) MySQL	I	CO1
1C-2	What does CSS stand for? A) Creative Style System B) Cascading Style Sheets C) Computer Style Syntax D) Custom Styling System	I	CO1

1C-3	Which protocol is used to securely transfer data over the internet? A) FTP B) HTTP C) HTTPS D) SMTP	I	CO1
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1C-4	What is the primary function of JavaScript on a website? A) To style content B) To structure content C) To add interactivity D) To manage databases	I	CO1
1C-5	Which tag is used for adding metadata in an HTML document? A) <meta> B) <head> C) <link> D) <body>	I	CO1
1C-6	What does DNS stand for? A) Digital Network System B) Domain Name System C) Data Node Service D) Dynamic Network Structure	I	CO1
1C-7	Which of the following is NOT a valid DNS record type? A) PTR B) SPF C) HTTP D) SRV	II	CO1

1C-8	What is the purpose of a DNS resolver? A) To send email messages B) To translate IP addresses to domain names C) To query DNS servers and return results to users	IV	CO1
	D) To manage domain registration		
1C-9	Which programming language is commonly used with Apache Tomcat? A) Python B) Java C) PHP D) Ruby	II	CO1
1C-10	What protocol is commonly used by application servers to communicate with web servers? A) FTP B) SMTP C) HTTP/HTTPS D) POP3	II	CO1
1C-11	Which of the following application servers is developed by Red Hat? A) WebLogic B) WildFly C) XAMPP D) IIS	V	CO1
1C-12	Which component is essential for maintaining session data in application servers? A) Load Balancer B) Cache C) Session Manager	III	CO1

	D) Firewall		
1C-13	Which of the following is a popular web server software? A) Apache B) MySQL C) MongoDB D) Postman	I	CO1
1C-14	Which web server is developed by Microsoft? A) Apache Tomcat B) IIS (Internet Information Services) C) Nginx D) Lighttpd	II	CO1
1C-15	What command is commonly used to restart the Apache web server on Linux systems? A) systemctl reload apache B) service apache start C) systemctl restart apache2 D) apachectl stop	II	CO1
	Fill in the blanks		
1F-1	The <____> tag is used to define the main heading of an HTML document.	I	CO1
1F-2	The <____>tag is used to create a hyperlink in HTML.	I	CO1

1F-3	To define a clickable button in HTML, you use the <_____>tag.	II	CO1
1F-4	A _____ server manages the storage, retrieval, and management of databases.	III	CO1
1F-5	A _____ server is used to manage and control email communication.	I	CO1
1F-6	he _____ server translates domain names into IP addresses for locating web resources.	II	CO1
1F-7	A _____ server is designed to authenticate and manage user permissions in a network.	I	CO1
1F-8	A _____ server helps manage multiple devices in a network by assigning IP addresses dynamically.	II	CO1
1F-9	A _____ server is responsible for delivering web pages to clients over the internet.	III	CO1
1F-10	The language used to add interactivity and dynamic behavior to web pages is _____.	IV	CO1
1F-11	A _____ is a unique address used to access websites on the internet.	I	CO1
1F-12	The HTML attribute used to define inline styles directly within an element is _____.	I	CO1
1F-13	The _____ tag is used to create an unordered list in HTML.	I	CO1
1F-14	The default port number for HTTP is _____.	I	CO1
1F-15	The _____ protocol is used to securely transfer files between a client and a server.	I	CO1
	Match the following		
1M-1	Match the following a) HTML (i) Serves web content like HTML, CSS, and images b) Web server (ii) Defines the structure of web content c) DNS server (iii) Provides dynamic content handling d) Application server (iv) Translates domain names to IP addresses	I	CO1

1M -2	Match the following a) Database server (i) Embeds an image into a web page b) (ii) Stores and manages structured data c) <a> (iii) Ensures secure data transmission d) HTTPS (iv) Used to create hyperlinks in HTML	II	CO1
1M -3	Match the following a) Apache Tomcat (i) A Java-based application server developed by Oracle b) WebLogic (ii) An application server widely used for Java Servlets and JSP c) JBoss (WildFly) (iii) An application server known for Java EE support d) GlassFish (iv) An open-source Java EE application server	I	CO1
1M -5	Match the following a) Node.js (i) business logic, application logic, b) Application Server (ii) runtime environment for executing JavaScript on the server side c) Middleware (iii) Microsoft's web and application server for Windows d) IIS (iv) Software that connects client requests to backend services	IV	CO1
1M-5	Match the following a) MySQL (i) An open-source relational database known for web applications b) MongoDB (ii) A NoSQL database that stores data in JSON-like format c) PostgreSQL (iii) An open-source RDBMS known for advanced features and scalability d) SQL Server (iv) A relational database server developed by Microsoft	II	CO1
5 - MARKS QUESTIONS			
1.	Describe about the functions defined by Web Browser?	I	CO1
2.	Difference between APPLICATION server and WEB server?	II	CO1
3.	Discuss about types of servers?	II	CO1
4.	Explain about HTML tags with an example.?	IV	CO1
5.	Evaluate HTTP request and HTTP response.?	V	CO1

6.	Explain the following in brief. A. Domain B. IP Address C. DNS .?	II	CO1
7.	Explain about HTML tags and create table?	II	CO1
8.	Explain the process of client server communication requests.? .	II	CO1
9.	Design a simple web page consists of tables and images.?	II	CO1
10.	What are Web Essentials? Explain their significance in web development.?	II	CO1
11.	State the following. HTTP cache control and HTTP response?	II	CO1
12.	Describe about the functions defined by Web Browser?	V	CO1
13.	Describe the procedure to create a website.? .	IV	CO1
14.	Evaluate TCP and IP.	III	CO1
15.	Develop a website which illustrates the significance of “frame” tag?	V	CO1

Unit -II : SCRIPTING ESSENTIALS

Multiple Choice Questions

2C-1	Which of the following is NOT a scripting language? A) Python B) JavaScript C) C++ D) Bash	II	CO2
2C-2	Which command is used to display text in Bash? A) print B) console.log() C) echo D) display	III	CO2
2C-3	In Python, which symbol is used for comments? A) // B) # C) /* */ D) --	I	CO2
2C-4	What is the output of the following Python code? x = 5 print(x == 5)print(x = 5) A) True followed by True B) True followed by False C) True followed by an error D) False followed by True	II	CO2
2C-5	In PowerShell, which symbol is used to define a variable? A) \$ B) @ C) & D) #	I	CO2
2C-6	What will the following JavaScript code output? console.log(type of null); A) null B) object C) undefined D) string	IV	CO2

2C-7	Which file extension is commonly used for Python scripts? A) .bash B) .py C) .sh D) .js	IV	CO2
2C-8	Which symbol is used to start a PHP block of code? A) <script> B) <?php C) <? D) <!-->	V	CO2
2C-9	Which of the following is a valid way to declare a variable in PHP? A) int x = 5; B) var x = 5; C) \$x = 5; D) x := 5;	VI	CO2
2C-10	Which function is used to output text in PHP? A) echo B) print() C) console.log() D) Both A and B	III	CO2
2C-11	Which of the following is the correct way to include a file in PHP? A) import 'file.php'; B) include('file.php'); C) require_once 'file.php'; D) Both B and C	I	CO2
2C-12	What will this code output? <pre>php CopyEdit \$x = 5;\$y = "5";echo (\$x === \$y) ? "True" : "False";</pre> A) True B) False C) Error D) 5	I	CO2
2C-13	Which function is used to connect to a MySQL database in PHP? A) mysqli_connect() B) mysql_connect() C) db_connect() D) connect_db()	I	CO2

2C-14	What is the correct way to start a session in PHP? A) session_start(); B) start_session(); C) session(); D) init_session();	V	CO2
2C-15	Which of the following methods is used to retrieve data from a form submitted using the GET method? A) \$_POST B) \$_SESSION C) \$_REQUEST D) \$_GET	III	CO2
Fill in the blanks			
2F-1	PHP scripts are executed on the _____ side.	I	CO2
2F-2	The correct syntax to start a PHP block is _____.	I	CO2
2F-3	Variables in PHP are declared using the _____ symbol.	II	CO2
2F-4	To print text in PHP, we can use _____ or _____.	I	CO2
2F-5	The function used to connect to a MySQL database is _____.	III	CO2
2F-6	PHP files are saved with the extension _____.	II	CO2
2F-7	The function used to start a new session in PHP is _____.	I	CO2
2F-8	In PHP, the _____ keyword is used to define a constant.	III	CO2
2F-9	To convert a string to lowercase in PHP, we use the function _____.	II	CO2
2F-10	In PHP, the function used to create a cookie is _____.	I	CO2
2F-11	The setcookie() function must be called before any _____ <u>is sent to the browser.</u>	I	CO2
2F-12	The first parameter of the setcookie() function is the _____ of the cookie.	III	CO2
2F-13	To access a cookie value in PHP, we use the superglobal array _____.	V	CO2
2F-14	A cookie can be deleted by setting its expiration time to a value in the _____.	I	CO2
2F-15	The _____ attribute prevents client-side scripts from accessing the cookie.	I	CO2
Match the following			
2M-1	Match the following	I	CO2

	a) setcookie() (i) Access cookie values in PHP b) \$_COOKIE (ii) Used to create a cookie c) HttpOnly (iii) Ensures the cookie is transmitted only over HTTPS d) Secure (iv) Restricts cookie access to HTTP only (improves security)		
2M-2	Match the following a) session_start() (i) Ends the session and clears session data b) session_destroy() (ii) Begins a new session or resumes an existing one c) isset() (iii) Sets a cookie to expire in 1 hour d) time() + 3600 (iv) Checks if a variable or cookie is set	I	CO2
2M-3	Match the following a) var (i) Declares a variable with block scope b) let (ii) Declares a variable with function scope c) const (iii) Returns the data type of a variable d) typeof (iv) Declares a constant value	I	CO2
2M-4	Match the following a) isNaN() (i) Executes a function after a specified delay b) setTimeout() (ii) Checks if a value is not a number c) addEventListener() (iii) Converts JSON string to JavaScript object d) JSON.parse() (iv) Attaches an event handler to an element	V	CO2
2M-5	Match the following a) JavaScript (i) Server-side scripting language b) PHP (ii) Client-side scripting language c) Node.js (iii) Server-side framework by Microsoft d) ASP.NET (iv) Server-side environment for JavaScript	IV	CO2

5 MARKS QUESTIONS			
1.	Explain about PHP variables?	VI	CO2
2.	Evaluate PHP operators and flow controlling.?	IV	CO2
3.	Explain about cookies and authentication.?	I	CO2
4.	What are the types of scripting languages and explain it.?	II	CO2

5.	Describe about Arithmetic operators and its operations.?	III	CO2
6.	Write PHP program to print whether current year is leap year or not.?	II	CO2
7.	Write PHP script to display Fibonacci of length	V	CO2
8.	Summarize in brief about arrays in PHP with suitable examples.?	I	CO2
9.	Differentiate between client side scripting and server side scripting.	II	CO2
10.	Write a PHP code to do string manipulations?.	I	CO2
11.	Write PHP script to display the Fibonacci series of length 10.?	V1	CO2
12.	Explain about types of scripting languages.?	V	CO2
13.	Write and explain PHP working principle?	III	CO2
14.	Analyze the File handling methods and explain with example.?	II	CO2
15.	Explain the cookies authentication with program.?	I	CO2

Unit – III : DATABASE ESSENTIALS

Multiple Choice Questions

3C-1	Which of the following is an example of a relational database? A) MongoDB B) Oracle C) Redis D) Neo4j	I	CO3
3C-2	Which language is used to query data from relational databases? A) HTML B) JavaScript C) SQL D) Python	III	CO3
3C-3	Which SQL command is used to create a new database? A) MAKE DATABASE	II	CO3
	B) NEW DATABASE C) CREATE DATABASE D) INIT DATABASE		

3C-4	What is the function of the PRIMARY KEY in a database table? A) Ensures data security B) Uniquely identifies each record C) Links tables together D) Controls data redundancy	I	CO3
3C-5	Which command is used to remove all records from a table without deleting the table itself? A) DROP B) DELETE C) REMOVE D) TRUNCATE	IV	CO3
3C-6	Which of the following is a NoSQL database? A) MySQL B) PostgreSQL C) MongoDB D) SQLite	I	CO3
3C-7	Which SQL function is used to count the total number of rows in a table? A) SUM() B) COUNT() C) TOTAL() D) NUMBER()	I	CO3
3C-8	Which of the following is an example of DDL (Data Definition Language)? A) INSERT B) DELETE C) UPDATE D) CREATE	I	CO3

3C-9	What does the term 'Normalization' refer to in databases? A) Increasing redundancy B) Optimizing data storage by eliminating redundancy C) Encrypting sensitive data D) Creating database backups	I	CO3
3C-10	Which database type stores data in table format with rows and columns? A) Hierarchical Database B) Relational Database C) Object-Oriented Database D) Document Database	I	CO3
3C-11	What is the main purpose of an index in a database? A) To enforce data constraints B) To speed up query execution C) To store duplicate records D) To create relationships between tables	III	CO3
3C-12	Which of the following types of indexes allows for faster searching of text data? A) Clustered Index B) Full-Text Index C) Unique Index D) Composite Index	III	CO3
3C-13	Which SQL command is used to create an index? A) MAKE INDEX B) CREATE INDEX C) ADD INDEX D) BUILD INDEX	III	CO3
3C-14	Which function returns the maximum value in a column? A) MAX() B) HIGH() C) GREATEST()	I	CO3

	D) MAXIMUM()		
3C-15	Which SQL function is used to round a numeric value to a specified number of decimal places? A) ROUND() B) TRUNC() C) CEIL() D) FLOOR()	V	CO3
Fill in the blanks			
3F-1	A _____ is a collection of related data organized in a way that allows efficient retrieval and management.	I	CO3
3F-2	The _____ model organizes data in a tree-like structure with parent-child relationships.	I	CO3
3F-3	In a relational database, a _____ uniquely identifies each record in a table.	II	CO3
3F-4	A _____ key is used to establish relationships between two tables.	I	CO3
3F-5	The process of organizing data to reduce redundancy is called _____.	V	CO3
3F-6	The SQL command used to retrieve data from a database is _____.	I	CO3
3F-7	The _____ clause is used to filter records based on a specified condition.	II	CO3
3F-8	To add new data to a table, the _____ command is used.	I	CO3
3F-9	The SQL command used to delete an entire table structure (including data) is _____.	I	CO3
3F-10	To count the number of rows in a table, the function _____ is used.	II	CO3
3F-11	The _____ function is used to find the highest value in a column.	I	CO3
3F-12	To connect to a MySQL database in PHP, the function _____ is commonly used for procedural programming.	I	CO3
3F-13	In PHP, the function _____ is used to execute an SQL query.	II	CO3
3F-14	To close a MySQL database connection in PHP, the function _____ is used.	IV	CO3
3F-15	To select a database after establishing a connection, the function _____ is used.	I	CO3
Match the following			

3M-1	Match the following a) Primary Key (i) Used to connect PHP to a MySQL database b) mysqli_connect() (ii) Ensures data uniqueness in a table c) COUNT() (iii) Establishes a link between two tables	I	CO3
	d) Foreign Key (iv) Returns the number of rows in a table		
3M-2	Match the following a) mysqli_query() (i)Deletes a table structure and its data b) DROP TABLE (ii) Executes an SQL query in PHP c) WHERE Clause (iii) Rounds off decimal values to a specified precision d) ROUND() (iv) filters records based on a condition	I	CO3
3M-3	Match the following a) Relational Database (i) Uniquely identifies each record in a table b) Primary Key (ii) Organizes data in tables with rows and c) Foreign Key (iii) Reduces data redundancy and improves data integrity d) Normalization (iv) Establishes a relationship between two tables	I	CO3
3M-4	Match the following a) Data Redundancy (i) Structured Query Language used to manage databases b) SQL (ii) Duplication of data in multiple database locations c) ER Diagram (iii) Ensures database transactions are Atomic, Consistent, Isolated, and Durable d) ACID Properties (iv) Visual representation of database relationships	IV	CO3
3M-5	Match the following a) mysqli_connect() (i) Executes an SQL query in PHP b) mysqli_query() (ii) Establishes a connection to the MySQL server c) mysqli_fetch_assoc() (iii)Closes the MySQL database connection d) mysqli_close() (iv) Fetches a result row as an associative array	V	CO3
5 MARKS QUESTIONS			
1.	Write and explain database management ,database terms.?	III	CO3
2.	Describe mysql commands.?	II	CO3
3.	Explain about accessing MYSQL using PHP .?	IV	CO3
4.	Summarize Various Index in database?	I	CO3

5.	Describe detail about Data Types ?	II	CO3
6.	Write any 20 commands with its functions ?	I	CO3
7.	Describe detail about Data Types.in database?	II	CO3

8.	Describe views in DBMS?.	V	CO3
9.	Explain following Commands i. UPDATE — ii. DELETE — iii. INSERT INTO iv. CREATE DATABASE v. ALTER DATABASE vi. CREATE TABLE vii. ALTER TABLE ?	VI	CO3
10.	Explain Data Base Management ?	III	CO3
11.	Explain the following commands with examples.? A.SELECT B.SELECT COUNT C.SELECT DISTINCT	VI	CO3
12.	Describe mysql commands.?	I	CO3
13.	Describe function in databse?	II	CO3
14.	Analyze the Database Queries.?	II	CO3
15.	Explain the difference between a database and a database management system (DBMS).	II	CO3
	Unit – IV : NETWORKING ESSENTIALS		
	Multiple Choice Questions		
4C-1	What is a computer network? a) A device used to display information on a computer screen b) A collection of interconnected computers and devices that can communicate and share resources c) A type of software used to create documents and presentations d) The physical casing that protects a computer's internal components	I	CO4
4C-2	2. What are nodes in a computer network? a) the computer that routes the data b) the computer that terminates the data c) the computer that originates the data d) all of the mentioned	I	CO4
4C-3	3.Which protocol ensures reliable delivery A. UDP B. IP C. TCP	IV	CO4

	D. NETBEUI		
4C-4	4.Which protocol deals with resolving domain names A. SMTP B. DNS C. SPX D. NETBIOS	IV	CO4
4C-5	5. Wireless Local Area Network is based on _____ standards of IEEE? A 802.10 B 802.11 C 802.12 D.802.13	II	CO4
4C-6	6. Which one of the following switches uses store and forward transmission? A. Circuit switching B. Packet switching C. Both a and b D.None of the above	IV	CO4
4C-7	7.What is the standard form of ICMP? A. Internet Common Message Protocol B.Internet Code Message Protocol C. Internet Control Message Protocol D.None of the above	I	CO4
4C-8	8.Ethernet frame consists of _____ A) MAC address B) IP address C) Default mask D) Network address	I	CO4
4C-9	9. Which of the deals with routing tables. A. Forwarding B. Routing C.Directing D.None of the above	V	CO4
4C-10	Which routing uses the Dijkstra algorithm to build routing table A. distance vector B. link state C.path vector D.none of the above	IV	CO4

4C-11	11.Which is a set of rules governing data communication between two devices A.Protocol B.Message C.Medium D.Sender	II	CO4
4C-12	12.Which of the following is not an application layer service? a) Network virtual terminal b) File transfer, access, and management c) Mail service d) Error control	II	CO4
4C-13	13.Which of the following is an example of Bluetooth? a) wide area network b) virtual private network c) local area network d) personal area network	I	CO4
4C-14	14. Which of the following devices forwards packets between networks by processing the routing information included in the packet? a) firewall b) bridge c) hub d) router	IV	CO4
4C-15	Which topology requires a multipoint connection? a) Ring b) Bus c) Star d) Mesh	II	CO4
	Fill in the blanks		
4F-1	1._____ is a dedicated link between the sender and the receiver.	II	CO4
4F-2	2.All computers connected to the Internet and wanting to use it for sending/receiving data must follow a common set of rules for communication called _____.	IV	CO4
4F-3	3. The _____ topology has a central controller.	IV	CO4
4F-4	4.A MAC address consumes _____ bytes or _____ bits.	II	CO4
4F-5	5.The _____ is the protocol used to make hypertext document readable on the WWW.	II	CO4

4F-6	6.A _____ is a set of devices (nodes) connected by media links	IV	CO4
4F-7	7. The packet of information at the application layer is called _____	II	CO4
4F-8	8.Application layer offers _____ service.	I	CO4
4F-9	9.IP packet is called a _____.	I	CO4
4F-10	10.Wi-Fi requires a _____ to broadcast the signal wirelessly.	IV	CO4
4F-11	11.Ethernet is a _____ network connection that uses cables to connect devices.	IV	CO4
4F-12	12.A _____ is a basic networking device that broadcasts data to all connected devices.	V	CO4
4F-13	13.A _____ is used to monitor and control incoming and outgoing network traffic for security.	I	CO4
4F-14	14.The _____ layer in the TCP/IP model is responsible for routing and logical addressing.	IV	CO4
4F-15	15.The _____ protocol breaks data into packets at the Transport layer.	I	CO4
	Match the following		
3M-1	Match the following. 1. Hub A.Datalink layer 2. Switch B.Network layer 3. Router C.Application layer 4. Gateway D.Transport layer.	I	CO4
3M-2	1.IP Address A. Connects multiple networks 2.Router B. Identifies a device on a network 3.TCP/IP C. Local area network 4.LAN D. Network communication protocol	II	CO4
3M-3	1.WAN A.Local Area Network 2.MAN B.Wide Area Network 3.PAN C.Metropolitan Area Network 4.LAN D.Personal Area Network	IV	CO4

3M-4	1.Application Layer a..Provides end-to-end communication and error handling 2.Transport Layer b. Supports network services and applications 3.Internet Layer c. Responsible for the actual transmission of data over physical media 4.Link Layer d. Responsible for routing data across networks and logical addressing	V	CO4
3M-5	1.Ethernet A.Wireless connectivity 2.Wi-Fi B.Requires cables 3.Routing C.Uses wireless access points 4.WLAN D.Directs data packets between network	II	CO4
	5 MARKS QUESTIONS		
1	Explain the Datalink, Physical and Networks Layers in OSI model	II	CO4
2	Describe the some advantages of Bus and Star Topology	I	CO4
3	Briefly discuss about the TCP/IP Protocol architecture	I	CO4
4	Describe the Importance of TCP / IP and compare with OSI	II	CO4
5	Describe the Basic communication model with an example	III	CO4
6	Draw the IPv4 header format and explain it in detail.	I	CO4
7	Summarize the different types of transmission medium used in network	I	CO4
8	Describe the WIFI network services.	IV	CO4
9	What are routers? Explain in detail?	IV	CO4
10	State the difference between WLAN and WAN?	II	CO4
11	Explain packet switching in detail.	I	CO4

12	Explain in detail about Wireless LAN protocols	I	CO4
13	Describe the various network topologies in details.	III	CO4
14	Write the differences between packet switching and circuit switching	III	CO4
15	Discuss about the Firewall and modem	III	CO4
	Unit – V : APPLICATION ESSENTIALS		
	Multiple Choice Questions		
5C-1	1.Which of the following is an example of a simple interactive application? A. Calculator app B. Static web page C. Printed book D. Pdf document	IV	CO5
5C-2	2.Which of the following is a database management system (DBMS)? A.MSExcel B.MSWord C.MySQL D.Adobe Photoshop	I	CO5
5C-3	3. Which of the following is used to uniquely identify each record in a table? A. Foreign Key B. Column C. Primary Key D. Index	IV	CO5
5C-4	4.Which of the following is not a component of multimedia? A. Text B. Graphics C. Compiler D. Video	II	CO5
5C-5	5.Which application is commonly used for multimedia presentations? A. Microsoft Word B. Microsoft PowerPoint C. Excel D. Notepad		CO5

5C-6	6.Which of the following is a widely used multimedia file format? A. .exe B. .txt C. .mp4 D. .docx	IV	CO5
5C-7	7.What is the primary function of a Personal Information System (PIS)? A. Manage financial data B. Handle inventory details C. Store and manage individual personal data D. Process sales reports	V	CO5
5C-8	8.What type of data is considered sensitive personal information in a PIS? A. Email address B. Age C. Health records D. Job title	II	CO5
5C-9	9.What does the acronym PIS stand for in IT and management systems? A. Private Internet Software B. Personal Identification System C. Personal Information System D. Public Information Storage	IV	CO5
5C-10	10.What is the main goal of an Information Retrieval System? A. Store multimedia content B. Retrieve relevant documents based on user queries C. Process spreadsheets D. Translate languages	II	CO5
5C-11	11In IRS, a user's input is known as a: A.File B.Query C.Record D. Dataset	II	CO5
5C-12	12.What is the main purpose of a social networking site? A. Edit documents B. Perform calculations C. Connect and communicate with people D. Design web pages	IV	CO5
5C-13	13.What is a "hashtag" used for in social media? A. Logging out of apps	III	CO5

	B. Searching and categorizing content C. Sending private messages D. Blocking users		
5C-14	14.Which of the following technologies is a key component of the Internet of Things (IoT)? A. Data encryption B. Virtual reality C. Sensor and connectivity technologies D. Blockchain	II	CO5
5C-15	15.Which of the following is the first phase of the system development life cycle (SDLC)? A. Design B. Implementation C. Planning and Analysis D. Maintenance	IV	CO5
	Fill in the blanks		
5F-1	1.In a relational database, data is stored in the form of_____.	IV	CO5
5F-2	2.____keyword is used to modify existing records	II	CO5
5F-3	3.The software used to manage and interact with a database is called a _____.	III	CO5
5F-4	4.The full form of GIF is_____.	IV	CO5
5F-5	5.Multimedia applications are commonly used in_____	I	CO5
5F-6	6._____technology is often used to secure access to a PIS.	I	CO5
5F-7	7.The process of converting a document into a searchable format is called_____	III	CO5
5F-8	8._____ is a professional social networking site used for job searching and business networking.	IV	CO5
5F-9	9.WhatsApp is a messaging app owned by _____.	V	CO5

5F-10	10.Snapchat is known for its disappearing _____ messages.	I	CO5
5F-11	11._____ refers to high-speed wireless communication technology that is expected to revolutionize mobile networks and connectivity.	II	CO5
5F-12	12.A _____ is a model of working remotely, where employees perform their tasks from home or other locations outside the office.	IV	CO5
5F-13	13.In the _____ model, development progresses through a series of iterations revisiting and refining earlier phases.	III	CO5
5F-14	14._____ is the process of evaluating a system in terms of performance, security, and usability after it is installed.	II	CO5
5F-15	15._____ diagrams are used in system analysis to show how data flow through the system.	IV	CO5
	Match the following		
5M-1	Match the following 1.Codec A.Captures live video 2. Webcam B. Compresses and decompresses files 3.Adobe Photoshop C. Image editing software 4.MP3 D. Animation software	I	CO5
5M-2	1. Personal Information System A.Department that primarily uses PIS 2. Human Resources (HR) B.System to manage and store personal data 3.Biometric Login C.Ensures records are correct and up-to-date 4. Data Accuracy D. identity using fingerprint or face	III	CO5
5M-3	1. Facebook A.Social network for sharing photos and stories 2. Instagram B.One of the first global social networking platforms 3.Twitter C.Social platform known for short viral videos 4.TikTok D.Platform popular for real-time text-based updates	II	CO5
5M-4	1. Artificial Intelligence A.A system that records transactions across multiple computers 2. Cybersecurity B.Network of physical devices connected via the internet 3. Blockchain C.Machines performing tasks that require human intelligence 4. Internet of Things (IoT) D.Security measures for protecting digital data and networks	III	CO5
5M-5	1.System Analysis A.Process of ensuring a system performs well after deployment 2. System Design B.Phase where the system is installed and made operational 3. Implementation C.Identifies the current system problems and defines user needs 4. Maintenance D.Process of converting requirements into system specifications	II	CO5
	5 MARKS QUESTIONS		

1	Explain the steps for creating simple interactive applications	II	CO5
2	2.What is multimedia?Explain the components and applications of multimedia?	II	CO5
3	Explain the following in database applications. a. Primary key b. Private key c. Foreign key d. Composite key	IV	CO5
4	What is information system? Explain the steps involved in design and development of IS?	II	CO5
5	5. Explain how a Personal Information System is used in Human Resource Management.	IV	CO5
6	6.Describe the role of multimedia in education and training?	II	CO5
7	7.Explain the types of social networking applications.	II	CO5
8	8.Discuss the issues of social networking applications.	IV	CO5
9	9.Draw the ER diagram for the relationship of teacher and course.	VI	CO5
10	10.Explain the characteristics of Information retrieval systems.	II	CO5
11	11. Explain the different phases of the System Development Life Cycle (SDLC).	II	CO5
12	12.Explain the difference between a DBMS and an RDBMS.	II	CO5
13	13.List and explain different types of database relationships?	IV	CO5
14	14.What is an Information Retrieval System? Explain its purpose with advantages and disadvantages	II	CO5
15	15. Explain the role of event handling in interactive application?	IV	CO5

MODEL QUESTION PAPER

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY**(An Autonomous Institution under UGC, New Delhi)****Recognized under 2(f) and 12(B) of UGC Act 1956****III B.Tech-II Semester–End Examinations (Model paper)****Information Technology Essentials(R22INF3235)****Duration: 3 Hrs****Max Marks: 60 M****Section – A**

Answer <u>All</u> of the following questions		Marks: 10Qx1M = 10M		
		Marks	Course Outcome	BT Level
1	Describe about the functions defined by Web Browser?	1	CO1	I
2	Explain about HTML tags with an example.?	1	CO1	IV
3	What are the types of scripting languages ?	1	CO2	I
4	Write PHP program to print whether current year is leap year or not.?	1	CO2	IV
5	Explain Data Base Management ?	1	CO3	II
6	Explain the following commands with examples.? A. SELECT B.SELECT COUNT C.SELECT DISTINCT	1	CO3	VI
7	Briefly discuss about the TCP/IP Protocol architecture?	1	CO4	I
8	What are routers?	1	CO4	V
9	What is information system?	1	CO5	II
10	Explain the following in database applications. a. Primary key b. Private key	1	CO5	II

Section – B

Answer any <u>FIVE</u> questions choosing at least one from each Unit		Marks: 5Qx10M = 50M		
		Marks	Course Outcome	BT Level
UNIT-I				
11. Describe the procedure to create a website.?		10	CO1	V,II
(OR)				
12. Evaluate HTTP request and HTTP response.?				

UNIT-II				
13. Write a PHP code to do string manipulations?.	(OR)	10	CO2	I,II
14. Analyze the File handling methods and explain with example.?				
UNIT-III				
15.Explain about accessing MYSQL using PHP .?	(OR)	10	CO3 CO3	IV,II
16. Describe detail about Data Types.in database?				
UNIT – IV				
17. Briefly discuss about the TCP/IP Protocol architecture	(OR)	10	CO5	II,I
18 State the difference between WLAN and WAN?				
UNIT – V				
19. What is multimedia? Explain the components and applications of multimedia?	(OR)	10	CO5	II,IV
20. Discuss the issues of social networking applications.				

S.N O	Bloom Taxonomy Level	No. Of. Questions	%	Name & Signature of Paper Setter
1	Fundamental Knowledge from level I & II	6	60	
2	Knowledge on application & Analysis from level III & IV	2	20	
3	Critical thinking and ability to design from level V & VI	2	20	

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**MID
QUESTION PAPERS**

HT.No:

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

D4

III B.Tech - II Semester - I Mid Term Examinations, MARCH - 2026 BR-22

(R22INF3235) INFORMATION TECHNOLOGY ESSENTIALS

(For CSE, IT, AIDS, IOT & CSIT)

Dt: 18-03-2025, Day-3 (FN)

Max Marks: 30M

Duration: 2 Hrs

Blooms Taxonomy Levels : I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.

Course Outcomes: CO

Part - A (10 Marks)

SECTION A1: Answer All multiple choice questions.

Marks: 10Qx1/2M = 5M

- | | | | |
|--|-----|-----|-----|
| 1. Which of the following is a key component of a website's front-end?
A) PHP B) Python C) HTML D) MySQL | [] | I | CO1 |
| 2. Which protocol is used to securely transfer data over the internet?
A) FTP B) HTTP C) HTTPS D) SMTP | [] | I | CO1 |
| 3. Which of the following is NOT a valid DNS record type?
A) PTR B) SPF C) HTTP D) SRV | [] | II | CO1 |
| 4. Which of the following application servers is developed by Red Hat?
A) WebLogic B) WildFly C) XAMPP D) IIS | [] | V | CO1 |
| 5. Which command is used to display text in Bash?
A) print B) console.log() C) echo D) display | [] | III | CO2 |
| 6. What is the output of the following Python code?
<code>x = 5; print(x == 5); print(x = 5)</code>
A) True followed by True B) True followed by False
C) True followed by an error D) False followed by True | [] | II | CO2 |
| 7. Which symbol is used to start a PHP block of code?
A) <script> B) <?php C) <? D) < ! > | [] | V | CO2 |
| 8. What will this code output?
php CopyEdit
<code>\$x = 5; \$y = "5"; echo (\$x == \$y) ? "True" : "False";</code>
A) True B) False C) Error D) 5 | [] | I | CO2 |
| 9. Which of the following is an example of a relational database?
A) MongoDB B) Oracle C) Redis D) Neo4j | [] | I | CO3 |
| 10. What is the function of the PRIMARY KEY in a database table?
A) Ensures data security B) Uniquely identifies each record
C) Links tables together D) Controls data redundancy | [] | I | CO3 |

P.T.O

SECTION A2: Answer all fill in the blank questions.

Marks: 6Qx12M = 3M

11. A _____ server helps manage multiple devices in a network by assigning IP addresses dynamically. II CO1
12. A _____ server is used to manage and control email communication. I CO1
13. The language used to add interactivity and dynamic behavior to web pages is _____. IV CO1
14. Variables in PHP are declared using the _____ symbol. II CO2
15. PHP files are saved with the extension _____. II CO2
16. A _____ is a collection of related data organized in a way that allows efficient retrieval and management. I CO3

SECTION A3: Answer all Match the following questions

Marks: 2Qx1M = 2M

17.

1. Apache Tomcat	A. A Java-based application server developed by Oracle
2. WebLogic	B. An application server widely used for Java Servlets and JSP
3. JBoss (WildFly)	C. An application server known for Java EE support
4. GlassFish	D. An open-source Java EE application server

 I CO1

Answers: _____

18.

1. JavaScript	A. Server-side scripting language
2. PHP	B. Client-side scripting language
3. Node.js	C. Server-side framework by Microsoft
4. ASP.NET	D. Server-side environment for JavaScript

 IV CO2

Answers: _____

Part - B (20 Marks)Answer any FOUR questions.

Marks: 4Qx5M = 10M

19. What are Difference between APPLICATION server and WEB server? II CO1
20. Explain the process of client server communication requests. III CO1
21. Describe about the functions defined by Web Browser. V CO1
22. Differentiate between client side scripting and server side scripting. II CO2
23. Write and explain PHP working principle. III CO2
24. Write and explain database management, database terms. III CO3

Duration: 2 Hrs

Dt: 26-03-2025, Day-3 (FN)

Max Marks: 30M

Bloom's Taxonomy Levels: I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.

Course Outcomes: CO

Part - A (10 Marks)**SECTION A1: Answer All multiple choice questions.**

Marks: 10Qx1/2M = 5M

- | | | |
|---|-----|-----|
| 1. Which of the following is a key component of a website's front-end? | I | CO1 |
| A) PHP B) Python C) <u>HTML</u> D) MySQL | | |
| 2. What is the primary function of JavaScript on a website? | I | CO1 |
| A) To style content B) To structure content | | |
| C) <u>To add interactivity</u> D) To manage databases | | |
| 3. Which tag is used for adding metadata in an HTML document? | I | CO1 |
| A) <u><meta></u> B) <head> C) <link> D) <body> | | |
| 4. Which programming language is commonly used with Apache Tomcat? | II | CO1 |
| A) Python B) <u>Java</u> C) PHP D) Ruby | | |
| 5. Which of the following is NOT a scripting language? | II | CO2 |
| A) Python B) JavaScript C) <u>C++</u> D) Bash | | |
| 6. What is the output of the following Python code? | II | CO2 |
| x = Sprint(x == 5) print(x == 5) | | |
| A) True followed by True B) True followed by False | | |
| C) <u>True followed by an error</u> D) False followed by True | | |
| 7. Which file extension is commonly used for Python scripts? | IV | CO2 |
| A) .bash B) <u>.py</u> C) .sh D) .js | | |
| 8. Which of the following is a valid way to declare a variable in PHP? | VI | CO2 |
| A) int x = 5; B) var x = 5; C) <u>\$x = 5;</u> D) x := 5; | | |
| 9. Which language is used to query data from relational databases? | III | CO3 |
| A) HTML B) JavaScript C) <u>SQL</u> D) Python | | |
| 10. Which SQL function is used to <u>count</u> the total number of rows in a table? | I | CO3 |
| A) SUM() B) <u>COUNT()</u> C) TOTAL() D) NUMBER() | | |

SECTION A2: Answer All fill in the blank questions.

Marks: 6Qx1/2M = 3M

- | | | |
|--|----|-----|
| 11. To define a clickable button in HTML, you use the <_____> tag. | II | CO1 |
| 12. The _____ server translates domain names into IP addresses for locating web resources. | II | CO1 |
| 13. Variables in PHP are declared using the _____ symbol. | II | CO2 |
| 14. PHP files are saved with the extension _____. | II | CO2 |
| 15. A _____ key is used to establish relationships between two tables. | I | CO2 |
| 16. The process of organizing data to reduce redundancy is called _____. | V | CO3 |

P.T.O.

SECTION A3: Answer all Match the following questions**Marks: 2Qx13**

17.	1. HTML	A. Serves web content like HTML, CSS, and images	1
	2. Web server	B. Defines the structure of web content	
	3. DNS server	C. Provides dynamic content handling	
	4. Application server	D. Translates domain names to IP addresses	

18.	1. var	A. Declares a variable with block scope	1
	2. let	B. Declares a variable with function scope	
	3. const	C. Returns the data type of a variable	
	4. typeof	D. Declares a constant value	

Part – B (20 Marks)**Answer any FOUR questions.****Marks: 4Qx5**

- | | |
|--|----|
| 19. Discuss about types of servers. | 11 |
| 20. Evaluate HTTP request and HTTP response. | V |
| 21. Explain about cookies and authentication. | 1 |
| 22. Summarize in brief about arrays in PHP with suitable examples. | 1 |
| 23. Write a PHP code to do string manipulations. | 1 |
| 24. Describe mysql commands. | 11 |
