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
Estd.2001

NAAC
NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

HANDOUT

IV CSE II Semester

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2022-23

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

HANDOUT- INDEX

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v)	Mid-1 & Mid-2 Questions (Previous 3 Academic Year)

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

B. TECH COMPUTER SCIENCE AND ENGINEERING

VISION OF THE INSTITUTE

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

MISSION OF THE INSTITUTE

IM_1 Provide high quality academic programs, training activities and research facilities.

IM_2 Promote Continuous Industry-Institute interaction for employability, Entrepreneurship, leadership and research aptitude among stakeholders.

IM_3 Contribute to the economical and technological development of the region, state and nation.

VISION OF THE DEPARTMENT

To be a technologically adaptive centre for computing by grooming the students as top notch professionals.

MISSION OF THE DEPARTMENT

DM1: To offer quality education in computing.

DM2: To provide an environment that enables overall development of all the stakeholders.

DM3: To impart training on emerging technologies.

DM4: To encourage participation of stakeholders in research and development.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Higher Studies: Graduate with an ability to pursue higher studies and get employment in reputed institutions and organizations.

PEO2: Domain Knowledge: Graduate with an ability to design and develop a product.

PEO3: Professional Career: Graduate with excellence by multidisciplinary approach to achieve successful professional career.

PEO4: Life Long Learning: Graduate with an ability to learn advanced skills to face professional competence through lifelong learning.

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

POs	Description
PO1	**Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**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.
PO3	**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.
PO4	**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.
PO5	**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.
PO6	**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.
PO7	**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.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**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.
PO11	**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.
PO12	**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)	
PSO1	To develop software projects using standard practices and suitable programming environment.
PSO2	To identify, formulate and solve the real life problems faced in the society, industry and other areas by applying the skills of the programming languages, networks and databases learned.
PSO3	To apply computer science knowledge in exploring and adopting latest technologies in various inter-disciplinary research activities.

COs MAPPING WITH POs & PSOs

(Distributed Systems) (R18CSE4261)

At the end of the course student will be able to:

C426.1	To Understand What and why a distributed system is (Understanding)
C426.2	To Understand theoretical concepts,namesly virtual time ,agreddment and consensus protocols (Understanding)
C426.3	To Understand IPC, Group communication & RPC concepts (Understanding)
C426.4	To understand the DEF and DSM Concepts (Understanding)
C426.5	To understand the concepts of transaction in distributed environment and associated concepts, namely, concurrency control, deadlocks and error recovery. (Understanding)

Course Articulation Matrix

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C215.1	3	-	-	3	-	-	-	-	-	-	-	2	3	3	-
C215.2	3	-	-	3	-	-	-	-	-	-	-	-	3	2	-
C215.3	3	2	3	2	3	-	-	-	-	-	-	2	3	3	-
C215.4	3	-	3	3	-	-	-	-	-	-	-	2	3	3	-
C215.5	3	-	-	-	-	-	-	-	-	-	-	2	3	2	-
C215	**3**	**2**	**3**	**2.7**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**3**	**2.6**	**3**

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
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Sheriguda (V), Ibrahimpatnam, R.R.Dist, Hyderabad - 501 510

D4

BR-18

Lr.No.SICET/AUTO/DAE/IV B.Tech Academic Calendar/306/2022 **Dt: 01.08.2022**

Dr.G. SURESH,
Principal,

To,
All the HODs.

IV B.TECH I SEM & II SEM ACADEMIC CALENDAR
ACADEMIC YEAR : 2022-23

Sir,

Sub: SICET (Autonomous) - Academic & Evaluation - Academic Calendar for **B.Tech – 4th Year** - For the academic year **2022-23** – Reg.

***

The approved Academic Calendar for **B.Tech – 4th Year (I & II Sem)** for the academic year **2022-23** is given below:

Academic Calendar for B.Tech – 4th Year Students (2019 - 20 Batch), BR-18 Regulation.

I - Semester

Commencement of I Semester class work	**25.08.2022 (Thursday)**	
I Spell of Instructions (Including Dussehra Holidays).	25.08.2022	26.10.2022 - 9 Weeks
Dussehra Holidays.	03.10.2022	08.10.2022 - 1 Week
I Mid Term Examinations for IV B.Tech I Sem Students.	27.10.2022	29.10.2022 - 3 Days
II Spell of Instructions.	31.10.2022	24.12.2022 - 8 Weeks
II Mid Term Examinations for IV B.Tech I Sem Students.	27.12.2022	29.12.2022 - 3 Days
Preparation Holidays, Practical Examinations and Remedial Mid Test (RMT).	30.12.2022	07.01.2023 - 9 Days
IV B.Tech I Semester End Examinations (Main) and Supplementary Examinations.	09.01.2023	25.01.2023 - 2 Weeks 3 Days
Sankranti Holidays.	13.01.2022	16.01.2022 - 4 Days
Commencement of class work of IV B.Tech II Semester - 27.01.2023 (Friday)		

II - Semester

Commencement of II Semester class work	**27.01.2023 (Friday)**	
I Spell of Instructions.	27.01.2023	23.03.2023 - 8 Weeks
I Mid Examinations for IV B.Tech II Sem Students.	24.03.2023	25.03.2023 - 2 Days
II Spell of Instructions.	27.03.2023	20.05.2023 - 8 Weeks
II Mid Examinations for IV B.Tech II Sem Students.	22.05.2023	23.05.2023 - 2 Days
Preparation Holidays, Project Evaluation and Remedial Mid Test (RMT).	24.05.2023	31.05.2023 - 8 Days
IV B.Tech II Semester End Examinations (Main) and Supplementary Examinations.	01.06.2023	07.06.2023 - 1 Week

ACE CE DIRECTOR PRINCIPAL

Copy to DAE,
Copy to all the Heads of the Depts.

CONTROLLER OF EXAMINATIONS
Sri Indu College of Engineering & Technology
(An Autonomous Institution under JNTUH)
Sheriguda (V), Ibrahimpatnam, R.R. Dist-501510.

DIRECTOR
(Academic Audit)
Sri Indu College of Engineering & Technology
Sheriguda, IBP, R.R. Dist-501510.

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

(An Autonomous Institution under UGC)
Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 403

Class: IV CSE-A (II SEM)

Time - Table

w.e.f:27.01.2023

Time	9:40 – 10:40	10:40 – 11:40	11:40 – 12:40	12:40 To 1:20	1:20 – 2:15	2:15 – 3:10	3:10 – 4:00
Days	1	2	3		4	5	6
Monday	DS	ISF	OB	L U N C H	ISF	OB	DS
Tuesday	OB	DS	ISF		OB	DS	ISF
Wednesday	ISF	OB	DS		DS	ISF	OB
Thursday	---------- Project Work----------				---------- Project Work----------		
Friday	----------Project Work----------				----------Project Work----------		
Saturday	---------- Project Work----------				---------- Project Work----------		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mr.M.Sathyam
DS	Distributed Systems	Mr. Snvasrk Prasad
ISF	Information Security Fundamentals	Dr. K.S.Sadhasiva Rao
PW	Project Work	Mr. Snvasrk Prasad

Class Co-Ordinator
Mr. Snvasrk Prasad

HOD

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)
Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 402

Class: IV CSE-B (II SEM)

Time - Table

w.e.f: 27.01.2023

Time	9:40 – 10:40	10:40 – 11:40	11:40 – 12:40	12:40 To 1:20	1:20 – 2:15	2:15 – 3:10	3:10 – 4:00
Days	1	2	3		4	5	6
Monday	ISF	OB	DS	L U N C H	OB	DS	ISF
Tuesday	DS	ISF	OB		DS	ISF	OB
Wednesday	OB	DS	ISF		ISF	OB	DS
Thursday	---------- Project Work----------				---------- Project Work----------		
Friday	----------Project Work----------				----------Project Work----------		
Saturday	---------- Project Work----------				---------- Project Work----------		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mrs.T.Madhavi
DS	Distributed Systems	Mr. Snvasrk Prasad
ISF	Information Security Fundamentals	Mrs.M.Sampoorna
PW	Project Work	Mr. Snvasrk Prasad

Class Co-Ordinator

Mr. Snvasrk Prasad

HOD

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)
Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 416

Class: IV CSE-C (II SEM)

Time - Table

w.e.f: 27.01.2023

Time	9:40 – 10:40	10:40 – 11:40	11:40 – 12:40	12:40 To 1:20	1:20 – 2:15	2:15 – 3:10	3:10 – 4:00
Days	1	2	3		4	5	6
Monday	OB	DS	ISF	LUNCH	DS	ISF	OB
Tuesday	ISF	OB	DS		ISF	OB	DS
Wednesday	DS	ISF	OB		OB	DS	ISF
Thursday	---------- Project Work----------				---------- Project Work----------		
Friday	----------Project Work----------				----------Project Work----------		
Saturday	---------- Project Work----------				---------- Project Work----------		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mrs.I.Mahalakshmi
DS	Distributed Systems	Dr. T. Charansingh
ISF	Information Security Fundamentals	Mr.B.Suresh
PW	Project Work	Ms.G.Swarnalatha

Class Co-Ordinator **HOD**

Mr.B.Suresh

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)
Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 417

Class: IV CSE-D (II SEM)

Time - Table

w.e.f:

27.01.2023

Time	9:40 – 10:40	10:40 – 11:40	11:40 – 12:40	12:40 To 1:20	1:20 – 2:15	2:15 – 3:10	3:10 – 4:00
Days	1	2	3		4	5	6
Monday	DS	ISF	OB	LUNCH	ISF	OB	DS
Tuesday	OB	DS	ISF		OB	DS	ISF
Wednesday	ISF	OB	DS		DS	ISF	OB
Thursday	---------- Project Work----------				---------- Project Work----------		
Friday	----------Project Work----------				----------Project Work----------		
Saturday	---------- Project Work----------				---------- Project Work----------		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mr.T.Jaya Krishna
DS	Distributed Systems	Dr. T. Charansingh
ISF	Information Security Fundamentals	Mr.B.Suresh
PW	Project Work	Ms.G.Swarnalatha

Class Co-Ordinator
Mr.B.Suresh

HOD

DISTRIBUTED SYSTEMS

SRI INDU COLLEGE OF ENGINEERING &TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

B.Tech. - IV Year – I Semester **L T P C 3 0 0 3**

(R18CSE4261) Distributed Systems

UNIT 1:

Characterization of Distributed Systems: Introduction, Examples of distributed Systems, Resource Sharing and the web, Challenges.

Systems Models: Introduction, Architectural models and Fundamental models.

UNIT 2: **Time and Global States**: Introduction, Clocks, events and Process states, Synchronizing physical clocks, logical time and logical clocks, global states, distributed debugging.

Coordination and Agreement: Introduction, Distributed mutual exclusion, Elections, Multicast communication, consensus and related problems.

UNIT 3: **Inter process Communication:** Introduction, The API for the Internet protocols, External data Representation and marshaling, Client-Server Communication, Group Communication, Case study: IPC in UNIX.

Distributed objects and Remote Invocation: Introduction, Communication between distributed objects, Remote Procedure call, Events and notifications, Case study: JAVA RMI.

UNIT 4: **Distributed File Systems**: Introduction, File Service architecture, case Study1: SUN network file Systems, Case Study 2: The Andrew File System.

Name Services: Introduction, Name Services and the Domain Name System, Directory Services, Case study of the Global name Service.

Distributed Shared Memory: Introduction, Design and Implementation issues, Sequential consistency and IVY case study, Release consistency and munin case study, Other consistency models.

UNIT 5: **Transaction and Concurrency control:** Introduction, Transactions, nested Transactions, Locks, Optimistic concurrency control, Timestamp ordering, Comparison of methods for concurrency control.

Distributed Transactions: Introduction, Flat and Nested Distributed Transactions, Atomic commit protocols, Concurrency control in distributed trasactions, Distributed transactions, Distributed deadlocks, Transaction recovery.

Text Book:

TEXT BOOKS: 1. Distributed Systems, Concepts and Design, G Coulouris, J Dollimore and T Kindberg, Pearson Education, 4TH Edition, 2009.

REFERENCES:

1. Distributed Systems: Principles and Paradigms, S. Tanenbaum and Maarten Van Steen, 2nd Edition, PHI.
2. Distributed Systems, An Algorithm Approach, Sukumar Ghosh, Chapman & Hali/CRC, Taylor & Fransis Group, 2007.

Outcomes

- Understand foundations of Distributed Systems.
- Introduce the idea of peer to peer services and file system.
- Understand in detail the system level and support required for distributed system.
- Understand the issues involved in studying process and resource management.

	SRI INDU COLLEGE OF ENGG & TECH LESSON PLAN (Regulation :R18) Department of Computer Science and Engineering	Prepared onRev1: Page: 1 of 2
Sub. Code & Title	R18CSE4261 & Distributed Systems	
Academic Year: 2022-23	Year/Sem./Section	VI-II A,B,C,D
Faculty Name & Designation	Snvasrk Prasad & Dr.T.Charan Singh Assistant Professor	

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Proposed Date of Handled	CO/RBT
			From	To				
UNIT I								
1.1	Define distributed system and list out three advantages in it?	T1,R1	1	4	Black Board	1		CO1
1.2	Write examples of distributed systems?	T1,R1	4	6	Black Board	1		CO1
1.3	Define effective resource sharing	R1	6	10	Black Board	2		CO1
1.4	List the characteristics of heterogeneity	T1,R1	W1	W1	Black Board	1		CO1
1.5	Write the type of network can be used by distributed system	T1	15	17	Black Board	1		CO1
1.6	List the examples of the distributed systems	T1	18	19	Black Board	1		CO1
1.7	Define types of failures	R1	20	21	Black Board	1		CO1
1.8	Criticize the fundamental models	R1	22	24	Black Board	1		CO1
1.9	Recognize the characteristics of DS	R1	25	27	Black Board	1		CO1
1.10	Define synchronous and asynchronous distributed systems	R1	28	30	Black Board	1		CO1
UNIT II								
2.1	Classify in details about clocks, events and process state. Explain Berkley's algorithm?	T1	43	48	Black Board	1		CO2
2.2	Write about synchronization of physical clock	T1	49	54	Black Board	2		CO2
2.3	Discuss in brief about Distributed mutual exclusion	T1	55	57	Black Board	1		CO2
2.4	Describe briefly about network time protocol	T1	58	62	Black Board	1		CO2
2.5	Demonstrate Election algorithm with example	T1	62	65	Black Board	1		CO2
2.6	State the multicast communication and discuss the following two multicast categories	T1	66	68	Black Board	1		CO2

	(A) Basic Multicast (B) Reliable Multicast							
2.7	Explain an explanation about global states	T1	69	72	Black Board	1		CO2
2.8	Explain about consensus and related problems	T1	73	76	Black Board	1		CO2
2.9	Classify Ordered Multicast with examples	T1	76	79	Black Board	1		CO2
2.10	Demonstrate the networking issues for distributed System	T1	80	83	Black Board	1		CO2
UNIT III								
3.1	Demonstrate the characteristics of inter-process communication	T1	101	106	Black Board	1		CO3
3.2	Illustrate UDP datagram communication	T1	106	109	Black Board	1		CO3
3.3	Explain External Data Representation and Marshalling	T1	109	112	Power Point Presentation	1		CO3
3.4	Describe about the client server communication	T1	113	114	Black Board	1		CO3
3.5	Illustrate about the group communication	T1	118	120	Black Board	1		CO4
3.6	Differentiate of distributed objects and their communications	T1	121	125	Black Board	1		CO4
3.7	Explain Distributed Garbage Collection	T1	126	127	Black Board	1		CO4
3.8	Write about Remote Procedure call with a case study	T1	129	130	Power Point Presentation	1		CO4
3.9	Explain in detail about Events and Notifications?	T1	131	132	Black Board	1		CO4
3.10	Describe java RMI.	T1	133	134	Black Board	1		CO4
UNIT IV								
4.1	Demonstrate the Distributed File Systems requirements	T1	150	153	Black Board	1		CO5
4.2	Formulate about the file service architecture	T1	W4	W4	Black Board	1		CO5
4.3	Illustrate the Sun Network File System Architecture	T1	157	160	Black Board	1		CO5
4.4	Explain in details about the Andrew file system	T1	W2	W2	Black Board	1		CO5
4.5	Describe the Name Services and the Domain Name System in DS	T1	W2	W2	Black Board	1		CO5
4.6	Examine details the case study of X.500 directory services?	T1	W2	W2	Black Board	1		CO5
4.7	Discuss the implementation issues in distributed shared memory	T1	W2	W2	Black Board	1		CO5
4.8	1. Explain Sequential Consistency and IVY? (a)System Model	T1	W2	W2	Black Board	1		CO5

	(b) Write Invalidation							
4.9	Describe a Dynamic Distributed Manager Algorithm	T1	W2	W2	Black Board	1		CO5
4.10	Discuss the Release Consistency and MUNIN	T1	W2	W2	Black Board	1		CO5
UNIT V								
5.1	Describe in detail about concurrency control in transaction	**T1**	166	170	Black Board	1		CO6
5.2	Discuss in detail about deadlock and locking schemes in concurrency control	T1	172	175	Black Board	1		CO6
5.3	Write about optimistic concurrency control	T1	177	180	Black Board	1		CO6
5.4	Explain in detail about comparison of methods of concurrency control	T1	W5	W5	Black Board	1		CO6
5.5	Evaluate Time stamp ordering in detail	T1	W5	W5	Black Board	1		CO6
5.6	Elaborate the concurrency control in distributed transactions	T1,W1	19	185	Black Board	1		CO6
5.7	Describe about distributed deadlocks	T1	W5	W5	Black Board	1		CO6
5.8	Explain in details about Flat and Nested Distributed Transactions	T1	W5	W5	Black Board	1		CO6
5.9	Write about atomic commit protocols	T1	W5	W5	Black Board	1		CO6
5.10	. Differentiate between validation phase and update phase	T1	W5	W5	Black Board	1		CO6
		Signature of the HOD/Coordinator						

Expected Total No. of classes = 65

LIST OF TEXT BOOKS AND REFERENCES

Text Book:

1. Electronic Commerce - Technologies & Applications, Bhaskar Bharat, TMH

Reference Books:

1. Distributed Systems: Principles and Paradigms, S. Tanenbaum and Maarten Van Steen, 2nd Edition, PHI.
2. Distributed Systems, An Algorithm Approach, Sukumar Ghosh, Chapman & Hali/CRC, Taylor & Fransis Group, 2007.

Web links:

W1: https://www.geeksforgeeks.org/what-is-a-distributed-system/
W2: https://www.splunk.com/en_us/data-insider/what-are-distributed-systems.html
W3: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://mrcet.com/downloads/digital_notes/CSE/III%20Year/Distributed%20systems.pdf
W4: hrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://mrcet.com/downloads/digital_notes/CSE/III%20Year/DISTRIBUTED%20SYSTEMS%20NOTES.pdf

ASSIGNMENT -1

S.No.	Assignment Questions	Course Outcome	Books To be Referred	Date Of Announcement	Date Of Submission
1	Illustrate the various challenges of distributed systems and explain each and every one	CO1	T1		
2	Describe in detail about Examples of Distributed Systems	CO3	T1		
3	State the clock skew and clock drift	CO1	T1		
4	What are the two modes of synchronization	CO2	T1		
5	Define inter-process Communication	CO2	T1		

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R20)** **Department of Computer Science and Engineering**	**(Regulation :R20)** **Prepared on** **Rev1:** **Page: 1 of 4**

Sub. Code & Title	**R18CSE4261 & Distributed Systems**	
Academic Year: 2022-23	**Year/Sem.**	**IV/II**
Faculty Name & Designation	**Snvasrk Prasad &Dr.T.Charan Singh & Asst.Prof**	

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 6. Creating)

UNIT-1 Electronic Commerce			
	1 MARKS QUESTIONS	**BT Level**	**Course Outcome**
1.	Define distributed system and list out three advantages in it? (Remembering)	1	CO1
2.	2. Write examples of distributed systems? (Applying)	1	CO1
3.	3. Define effective resource sharing?(Remembering)	1	CO1
4..	4. List the characteristics of heterogeneity?(Remembering)	1	CO1
5.	5. Write the type of network can be used by distributed system? (Applying)	1	CO1
6.	6. List the examples of the distributed systems? (Remembering)	1	CO1
7.	7. Define types of failures?(Remembering)	2	CO1
8	8. Criticize the fundamental models? (Analyzing)	1	CO1
9	9. Recognize the characteristics of DS? (Understanding)	1	CO1
10	10. Define synchronous and asynchronous distributed systems? (Remembering)	1	CO1
	5 MARKS QUESTIONS		
1.	Illustrate the various challenges of distributed systems and explain each and every one? (Understanding)	1	CO1
2.	2. Describe in detail about Examples of Distributed Systems? (Understanding)	6	CO1
3.	3. State them definition of Distributed System and illustrate the advantages and disadvantage. (Understanding)	1	CO2
4.	4. Illustrate details about architectural model? (Applying)	1	CO1
5.	5. Illustrate details about fundamental model? (Applying)	1	CO1
6	6. Explain the various types of networks? (Understanding)	4	CO1
7	7. Demonstrate the networking issues for distributed System? (Applying)		
8	8. A) Differentiate between intranet and internet (Analyzing)		
9	. B) Classify Characteristics of Distributed Systems? (Understanding)		
10	9. Discuss Resource sharing and Web in Distributed Systems? (Understanding)		

UNIT-II			
1 MARKS QUESTIONS			
1	State the clock skew and clock drift?(Remembering)	1	CO1
2	Define the UTC?(Remembering)	1	CO1
3	What are the two modes of synchronization? (Understanding)	1	CO1
4	State the clock synchronization done in Christian's method? (Remembering)	1	CO1
5	Define External synchronization? (Remembering)	1	CO1
6	Statethe logical clock?(Remembering)	1	CO1
7	Compare logical clock with physical clock. (Analyzing)	1	CO1
8	Write the issues resolved by Berkley's algorithm? (Applying)	1	CO1
9	Define consistent cut and inconsistent cut? (Remembering)	1	CO1
10	What is the termination procedure of the snapshot algorithm? (Understanding)	1	CO1
5 MARKS QUESTIONS			
1	Classify in details about clocks, events and process state. Explain Berkley's algorithm? (Understanding)	1	CO1
2.	Write about synchronization of physical clock? (Applying)	1	CO1
3.	Discuss in brief about Distributed mutual exclusion? (Understanding)	5	CO1
4.	Describe briefly about network time protocol? (Understanding)	1	CO1
5.	Demonstrate Election algorithm with example? (Applying)	1	CO1
6.	State the multicast communication and discuss the following two multicast categories (A) Basic Multicast (B) Reliable Multicast (Remembering)	1	CO1
7.	Explain an explanation about global states? (Understanding)	1	CO1
8	Explain about consensus and related problems? (Understanding)	1	CO1
9		1	CO1
10			
UNIT-III			

	1Mark Questions		
1.	Defineinter-process Communication? (Remembering)	1	CO2
2.	Differentiate the RMI and RPC? (Analyzing)	1	CO2
3	Define Datagram? (Remembering)	1	CO2
4.	Criticize the use of UDP? (Analyzing)	1	CO2
5	Define group communication? (Remembering)	1	CO2
6.	What is meant by client server communication? (Understanding)	1	CO2
7	Recognize the use of RMI registry? (Understanding)	1	CO3
8.	Memorize the distributed garbage collection? (Remembering)	1	CO3
9.	Criticize the use of Reflection in RMI? (Analyzing)	1	CO3
10.	Define Name spaces? (Remembering)	1	CO3
	5 Mark Questions		
1.	Demonstrate the characteristics of inter-process communication? Explain each and every one? (Applying)	2	CO3
2.	IIUstrate UDP datagram communication? (Applying)	2	CO3
3	Explain External Data Representation and Marshalling? (Understanding)	1	CO3
4.	Describe about the client server communication? (Understanding)	1	CO4
5	Illustrate about the group communication? (Applying)	1	CO4
6.	Differentiate of distributed objects and their communications? (Analyzing)	2	CO4
7	Explain Distributed Garbage Collection? (Understanding)	1	CO4
8.	Write about Remote Procedure call with a case study? (Applying)	2	CO4
9.	Explain in detail about Events and Notifications? (Understanding)	2	CO4
10	Describe java RMI? (Understanding)	2	CO4

UNIT-IV			
1 Mark Questions			
1.	Define distributed file system?(Remembering)	1	CO5
2.	State the metadata? (Remembering)	1	CO5
3.	Write the directory services? (Applying)	1	CO5
4.	Recall the Name Spaces? (Remembering)	1	CO5
5.	State domain name system?(Remembering)	1	CO5
6.	Write global State? (Creating)	2	CO5
7.	Define directory services? (Remembering)	1	CO5
8	Criticize the sequential consistency? (Analyzing)	1	CO5
9	State the shared memory?(Remembering)	1	CO5
10	Define the Thrashing?(Remembering)	1	CO5
5 MARK QUESTIONS			
1.	Demonstrate the Distributed File Systems requirements? (Applying)	1	CO5
2.	Formulate about the file service architecture? (Creating)	1	CO5
3.	Illustrate the Sun Network File System Architecture? (Applying)	1	CO5
4.	Explain in details about the Andrew file system? (Understanding)	1	CO5
5.	Describe the Name Services and the Domain Name System in DS? (Understanding)	1	CO5
6.	Examine details the case study of X.500 directory services? (Analyzing)	1	CO5

7	Discuss the implementation issues in distributed shared memory? (Understanding)		CO5
8	Explain Sequential Consistency and IVY? (a)System Model (b) Write Invalidation (C) Invalidation Protocols (Understanding)		CO5
9	Describe a Dynamic Distributed Manager Algorithm? (Understanding)		CO5
10	Discuss the Release Consistency and MUNIN? (Understanding)		CO5
11	Illustrate Other Consistency Models? (Applying)		CO5

Unit-V Electronic Data Interchange(EDI)			
1 MARKQUESTIONS			
1.	What do you mean by transaction recovery? (Understanding)	1	CO6
2.	State nested transaction? (Remembering)	1	CO6
3.	Define ACID properties? (Remembering)	1	CO6
4.	Define Concurrency control? (Remembering)	1	CO6
5.	List the methods of concurrency control? (Remembering)	1	CO6
6.	Define deadlock? (Remembering)	1	CO6
7.	Differentiate between validation phase and update phase? (Analyzing)	1	CO6
8	State time stamp ordering? (Remembering)	1	CO6
9	Define two-phase commit protocol? (Understanding)	1	CO6
10	State Edge chasing? (Remembering)	1	CO6
5 Marks Questions			
1.	Describe in detail about concurrency control in transaction? (Understanding)	1	CO6
2.	Discuss in detail about deadlock and locking schemes in concurrency control? (Understanding)	1	CO6
3.	Write about optimistic concurrency control? (Applying)	1	CO6
4	Explain in detail about comparison of methods of concurrency control? (Understanding)	1	CO6

5.	Evaluate Time stamp ordering in detail? (Evaluate)	1	CO6
6	Elaborate the concurrency control in distributed transactions? (Understanding)	1	CO6
7	Describe about distributed deadlocks? (Understanding)	1	CO6
8	Examine about the Transaction Recovery? (Analyzing)	1	CO6
9	Explain in details about Flat and Nested Distributed Transactions? (Understanding)	1	CO6
10	Write about atomic commit protocols? (Applying)	1	CO6

Write Your Ht.No. **D4**

Subject Code: **R18CSE4261**

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi.) - Recognized under 2(f) and 12(B) of UGC Act 1956.

IV B.Tech II Semester **Model Question Paper**

DISTRIBUTED SYSTEMS

(Common to CSE & Information Technology)

Duration: 3 Hrs **Maximum Marks: 70M**

SECTION-A

Answer all the following questions. **(5Qx 4M = 20M)**

1. Define distributed system and list out three advantages in it?.
2. Define the UTC?
3. Defineinter-process Communication?
4. State the metadata?
5. State nested transaction?

SECTION – B

Answer FIVE questions choosing at least one from each unit **(5Qx10M =50M)**

UNIT-I

6. Illustrate the various challenges of distributed systems and explain each and every one?

(OR)

7. Explain the various types of networks?

UNIT-II

8. Classify in details about clocks, events and process state. Explain Berkley's algorithm?

(OR)

9. Explain an explanation about global states?

UNIT-III

10. Explain External Data Representation and Marshalling

(OR)

11. Explain Distributed Garbage Collection?

UNIT-IV

12. Demonstrate the Distributed File Systems requirements?

(OR)

13. Discuss the Release Consistency and MUNIN?

UNIT-V

14. Describe in detail about concurrency control in transaction
15. Explain about distributed Deadocks?

(OR)

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

D4

IV B.Tech - II Semester – Model Mid Question Paper
R18CSE4261 & DISTRIBUTED SYSTEMS
(Common to CSE & Information Technology)

Duration: 90Mins **Max Marks: 25M**

Section – A

Answer *All* the questions **Marks: 5Qx1M = 5M**

a. Define Name spaces?
b. Write global State.
c. Define directory services?
d. State time ordering?
e. Define two-phase commit protocol.

Section – B

Answer any *FOUR* questions **Marks: 4Qx5M = 20M**

f. Write about Remote Procedure call with a cse study.
g. Explain in detail about Events and Notifications
h. Explain Sequential Consistency and IVY:
i. A) System Mode
j. B)Write Invalidation
k. C) Invalidation Protocols
l. Describe a Dynamic Distributed Manager Algorithm.
m. Describe about distributed deadlocks.
n. Explain in details about Flat and Nested Distributed Trasactions.

Explain briefly

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

Estd.2001

NAAC
NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

HANDOUT

Third Year CSE- Semester I

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2023-24

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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 (Previous 3 Academic Year)
v)	Mid-1 & Mid-2 Questions (Previous 3 Academic Year)

SRI INDU COLLEGE OF ENGINEERING &TECHNOLOGY

B. TECH –COMPUTER SCIENCE AND ENGINEERING

INSTITUTION VISION

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

INSTITUTION MISSION

IM_1 Provide high quality academic programs, training activities and research facilities.

IM_2 Promote Continuous Industry-Institute interaction for employability, Entrepreneurship, leadership and research aptitude among stakeholders.

IM_3 Contribute to the economical and technological development of the region, state and nation.

DEPARTMENT VISION

To be a technologically adaptive centre for computing by grooming the students as top notch professionals**.**

DEPARTMENT MISSION

The Department has following Missions:

DM_1 To offer quality education in computing.

DM_2 To provide an environment that enables overall development of all the stakeholders.

DM_3 To impart training on emerging technologies like Data Analytics, Artificial Intelligence and Internet of things

DM_4 To encourage participation of stakeholders in research and development.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: **Higher Degrees & Professional Employment:** Graduates with ability to pursue career in core industries or higher studies in reputed institution.

PEO 2: **Domain Knowledge:** Graduates with ability to apply professional knowledge/skills to design and develop product or process.

PEO 3: **Engineering Career:** Graduates with excellence in Electronics and Communication Engineering along with effective inter-personnel skills.

PEO 4: **Lifelong Learning:** Graduates equipped with skills in recent technologies and be receptive to attain professional competence through life-long learning.

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

PO	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 applyappropriate techniques, resources, and modern engineering and IT tools including prediction and modeling 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	
PSO 1	**Basic Electronic and communications knowledge:** Apply basic knowledge related to electronic circuits, VLSI, communication systems, signal processing and embedded systems to solve engineering/societal problems.
PSO 2	**Design Methods:** Design, verify and authenticate electronic functional elements for different applications, with skills to interpret and communicate results.
PSO 3	**Experimentation & Communications:** Engineering and management concepts are used to analyze specifications and prototype electronic experiments/projects either independently or in teams.

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

Sheriguda (V), Ibrahimpatnam, R.R.Dist., Hyderabad - 501 510

Ltr

BR-20

Lr.No.SICET/AUTO/DAE/III B.Tech Academic Calendar/173/2023 Dt: 28.07.2023

Dr. G. SURESH,
Principal,

To,
All the HODs.

B.TECH III-YEAR (I-SEM & II-SEM) ACADEMIC CALENDAR
ACADEMIC YEAR : 2023-24

Sir,

Sub: SICET (Autonomous) - Academic & Evaluation - Academic Calendar for **B.Tech – 3rd Year** for the academic year **2023-24 – Reg.**

*****

The approved Academic Calendar for **B.Tech – 3rd Year (I & II Sem)** for the academic year **2023-24** is given below:

Academic Calendar for B.Tech – 3rd Year Students (2021 - 22 Batch), BR-20 Regulation.

I – Semester

S.No.	EVENT	PERIOD	DURATION
1.	**Commencement of class work**	**07.08.2023 (Monday)**	
2.	1st Spell of Instructions for covering First Two and a half Units.	07.08.2023 – 30.09.2023	8 Weeks
3.	I Mid Term Examinations.	03.10.2023 – 07.10.2023	5 Days
4.	Submission of I Mid Term Examination Marks to the Autonomous Section on or before.	18.10.2023	
5.	2nd Spell of Instructions for covering Remaining Two and a half Units.	16.10.2023 – 21.10.2023	1 Week
6.	Dasara Vacation.	23.10.2023 – 28.10.2023	1 Week
7.	Continuation of 2nd Spell of Instructions for covering Remaining Two and a half Units.	30.10.2023 – 16.12.2023	7 Weeks
8.	II Mid Term Examinations.	18.12.2023 – 20.12.2023	3 Days
9.	Preparation Holidays & Practical Examinations and Remedial Mid Test (RMT).	21.12.2023 – 30.12.2023	1 Week 3 Days
10.	Submission of II Mid Term Examination Marks to the Autonomous Section on or before.	28.12.2023	
11.	I Semester End Examinations	02.01.2024 – 13.01.2024	2 Weeks
	Commencement of Class-Work for III B.Tech - II Semester 22.01.2024		

II – Semester

S.No.	EVENT	PERIOD	DURATION
1.	Semester Break and Sankranthi Holidays.	15.01.2024 – 20.01.2024	1 Week
2.	**Commencement of class work**	**22.01.2024 (Monday)**	
3.	1st Spell of Instructions for covering First Two and a half Units. (Including Sankranthi Holidays).	22.01.2024 – 16.03.2024	8 Weeks
4.	I Mid Term Examinations.	18.03.2024 – 23.03.2024	1 Week
5.	Submission of I Mid Term Examination Marks to the Autonomous Section on or before.	27.03.2024	
6.	2nd Spell of Instructions for covering Remaining Two and a half Units.	26.03.2024 – 11.05.2024	7 Weeks
7.	Summer Vacation	13.05.2024 – 25.05.2024	2 Weeks
8.	Continuation of 2nd Spell of Instructions for covering Remaining Two and a half Units.	27.05.2024 – 01.06.2024	1 Week
9.	II Mid Term Examinations.	03.06.2024 – 05.06.2024	3 Days
10.	Preparation Holidays & Practical Examinations and Remedial Mid Test (RMT).	06.06.2024 – 15.06.2024	1 Week 3 Days
11.	Submission of II Mid Term Examination Marks to the Autonomous Section on or before.	19.06.2024	
12.	II Semester End Examinations	18.06.2024 – 29.04.2024	2 Weeks

ACE CE DIRECTOR PRINCIPAL

Copy to DAE & Controller of Examination

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

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

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

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DEPARTMENT Academic CALENDAR – 2022-2023 (SEMESTER-1)

DAYS													
SUNDAY						NOVEMBER '22							
MONDAY					1			DECEMBER '22					FEBRUARY'23
TUESDAY		SEPTEMBER' 22			2							1	
WEDNESDAY					3		1					2	
THURSDAY	1			OCTOBER '22	4		2					3	
FRIDAY	2		1	Bathukamma Celebrations	5		3			JANUARY'23		4	
SATURDAY	3		2	Gandhi Jayanti/ HOLIDAY	6	HOLIDAY	4	HOLIDAY	1	NEW YEAR/ HOLIDAY		5	HOLIDAY
SUNDAY	4	HOLIDAY	3	DASARA HOLIDAYS	7		5		2	PRACTICAL EXAM		6	
MONDAY	5		4	DASARA HOLIDAYS	8	GURUNANAK JAYANTHI	6		3	PRACTICAL EXAM		7	
TUESDAY	6		5	DASARA HOLIDAYS	9		7		4	PRACTICAL EXAM		8	
WEDNESDAY	7		6	DASARA HOLIDAYS	10		8		5	PRACTICAL EXAM		9	
THURSDAY	8		7	DASARA HOLIDAYS	11		9		6	PRACTICAL EXAM		10	
FRIDAY	9	Ganesh Nimajanam	8	DASARA HOLIDAYS	12		10		7	PRACTICAL EXAM		11	
SATURDAY	10		9	HOLIDAY	13	HOLIDAY	11	HOLIDAY	8	H OLIDAY		12	HOLIDAY
SUNDAY	11	HOLIDAY	10		14		12		9	END EXAMINATION		13	
MONDAY	12	Commencement of Classes (III, IV Yr)	11		15		13		10	END EXAMINATION		14	
TUESDAY	13	IV-YEAR CRT TRAINING	12		16		14		11	END EXAMINATION		15	

WEDNESDAY	14	IV-YEAR CRT TRAINING	13		17		15		12	END EXAMINATION	16	
THURSDAY	15	IV-YEAR CRT TRAINING	14		18		16		13	BHOGI	17	
FRIDAY	16	IV-YEAR CRT TRAINING	15		19		17		14	SANKRANTHI	18	
SATURDAY	17	Telangana vimochana dinostavam	16	HOLIDAY	20	HOLIDAY	18	HOLIDAY	15	HOLIDAY	19	HOLIDAY
SUNDAY	18	HOLIDAY	17		21		19		16	HOLIDAY	20	
MONDAY	19	DRIVE	18		22		20		17	END EXAMINATION	21	
TUESDAY	20		19		23		21		18	END EXAMINATION	22	
WEDNESDAY	21		20		24		22		19	END EXAMINATION	23	
THURSDAY	22		21		25		23		20	END EXAMINATION	24	MID EXAM-I (III & IV)
FRIDAY	23		22		26		24		21	END EXAMINATION	25	MID EXAM-I (III & IV)
SATURDAY	24		23	HOLIDAY	27	HOLIDAY	25	CHRISTMAS/ HOLIDAY	22	HOLIDAY	26	HOLIDAY
SUNDAY	25	HOLIDAY	24		28		26	BOXING DAY/ HOLIDAY	23	END EXAMINATION	27	MID EXAM-I (III)
MONDAY	26		25	DIWALI	29		27	MID EXAM-II (III & IV)	24	END EXAMINATION	28	
TUESDAY	27		26		30		28	MID EXAM-II (III & IV)	25	END EXAMINATION	29	
WEDNESDAY	28		27	MID EXAM-I (III & IV)			29	MID EXAM-II (III & IV)	26	Republic Day		
THURSDAY	29		28	MID EXAM-I (III & IV)			30		27	COMMENCEMENT OF SEMESTER-II (III, IV Yr)		
FRIDAY	30		29	MID EXAM-I (III & IV)			31		28			
SATURDAY			30						29	HOLIDAY		
SUNDAY			31						30			
MONDAY									31			

CALENDAR INCHARGE

HOD/CSE
DEAN

PRINCIPAL

MONDAY	20		18		22		20		17	MID EXAM-II (III & IV)	21	
TUESDAY	21		19	Eid e Milad	23		21		18	MID EXAM-II (III & IV)	22	
WEDNESDAY	22		20		24		22		19	PRACTICAL EXAM	23	
THURSDAY	23		21		25		23		20	PRACTICAL EXAM	24	
FRIDAY	24		22		26		24	On e day workshop on Deep Learning	21	PRACTICAL EXAM	25	
SATURDAY	25		23		27		25	CHRISTMAS	22	PRACTICAL EXAM	26	
SUNDAY	26	HOLIDAY	24	HOLIDAY	28	HOLIDAY	26	HOLIDAY	23	HOLIDAY	27	HOLIDAY
MONDAY	27		25		29		27		24	PRACTICAL EXAM	28	
TUESDAY	28		26		30		28		25	PRACTICAL EXAM		
WEDNESDAY	29		27				29		26	Republic Day		
THURSDAY	30		28				30		27	END EXAMINATION		
FRIDAY			29						28	END EXAMINATION		
SATURDAY			30						29	END EXAMINATION		
SUNDAY		HOLIDAY	31	HOLIDAY		HOLIDAY		HOLIDAY	30	HOLIDAY		HOLIDAY
MONDAY									31	END EXAMINATION		

Two day workshop on machine Learning and
I oT for health care

CALENDAR INCHARGE **HOD/CSE** **PRINCIPAL**

Organizational Behavior

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C4143.1	2	3	3	-	-	-	-	3	3	-	-	3	3	3	3
C4143.2	3	3	2	-	-	3	-	-	3	-	-	3	3	2	3
C4143.3	3	-	-	-	-	3	-	-	-	-	3	3	3	3	3
C4143.4	2	-	3	-	-	-	-	-	3	-	-	2	3	3	3
C4143.5	3	**3**	-	-	-	3	-	-	-	-	3	3	3	3	3
C4143.6	3	3	3	-	-	-	-	-	2	-	-	3	3	3	3
C4143	**2.6**	**3**	**2.75**	**-**	**-**	**3**	**-**	**3**	**2.8**	**-**	**3**	**2.8**	**3**	**2.8**	**3**

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
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B.Tech. - III Year – I Semester **L T P C**
3 0 0 3

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

B.Tech. - IV Year – II Semester **L T P C**
3 0 0 3

(R22HMS4211) ORGANIZATIONAL BEHAVIOUR

Course Objectives: The objective of the course is to provide the students with the conceptual framework and the theories underlying Organizational Behavior.

Course Outcomes:

1. Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
2. Analyze the complexities associated with management of the group behavior in theorganization.
3. Demonstrate how the organizational behavior can integrate in understanding the motivation(why) behind behavior of people in the organization.

UNIT - I:

Introduction to OB - Definition, Nature and Scope – Environmental and organizational context – Impact of IT, globalization, Diversity, Ethics, culture, reward systems and organizational design on Organizational Behaviour. Cognitive Processes-I: Perception and Attribution: Nature and importance of Perception – Perceptual selectivity and organization – Social perception – Attribution Theories – Locus of control – Attribution Errors –Impression Management.

UNIT- II:

Cognitive Processes-II: Personality and Attitudes – Personality as a continuum – Meaning of personality - Johari Window and Transactional Analysis - Nature and Dimension of Attitudes – Job satisfaction and organizational commitment-Motivational needs and processes- Work-Motivation Approaches Theories of Motivation- Motivation across cultures - Positive organizational behaviour: Optimism – Emotional intelligence – Self-Efficacy.

UNIT - III:

Dynamics of OB-I: Communication – types – interactive communication in organizations – barriers to communication and strategies to improve the follow of communication - Decision Making: Participative decision-making techniques – creativity and group decision making. Dynamics of OB –II Stress and Conflict: Meaning and types of stress –Meaning and types of conflict - Effect of stress and intra- individual conflict - strategies to cope with stress and conflict.

UNIT - IV:

Dynamics of OB –III Power and Politics: Meaning and types of power – empowerment - Groups Vs. Teams – Nature of groups – dynamics of informal groups – dysfunctions of groups and teams – teams in modern work place.

UNIT - V:

Leading High performance: Job design and Goal setting for High performance- Quality of Work Life- Socio technical Design and High-performance work practices - Behavioural performance management: reinforcement and punishment as principles of Learning –Process of Behavioural modification - Leadership theories - Styles, Activities and skills of Great leaders.

	SRI INDU COLLEGE OF ENGG & TECH **LESSON PLAN** **(Regulation: R18)** **Department of Information Technology**	**Prepared on** **Rev1:** **Page: 12 of 257**

Sub. Code & Title	R19HMS4211 **Organizational Behavior**	
Academic Year: 2023-24	**Year/Sem./Section**	**III/1/CSE**
Faculty Name & Designation	**K MAHA LAKSHMI I, Assistant Professor**	

LESSON PLAN

Unit/ Item No.	Topic (s)	Book Reference	Page (s) From	Page (s) To	Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
	UNIT – I							
I	**INTRODUCTION TO ORGANIZATIONAL BEHAVIOUR:** **Introduction and**					**12**		
1.1	Definition	T1, R 5	1.1	1.3	Black board	01		CO-1, L1
1.2	Nature and Scope of Managerial Economics	T1, R 5	1.3	1.9	Black board	01		CO-1, L2
1.3	Demand Analysis	T1, R 5	1.51	1.55	Black board	01		CO-1, L2
1.4	Demand Determinants	T1, R 5	1.82	1.84	Black board	01		CO-1, L3
1.5	Law of Demand and its exceptions	T1, R 5	1.84	1.89	Black board	01		CO-1, L2
1.6	Elasticity of Demand	R 5, R7	1.91	1.106	Black board	01		CO-1, L2
1.7	Definition, Types	R 5, R7	1.134	1.37	Black board	01		CO-1, L3
1.8	Measurement	R 5,W6	2.1	2.3	Presentation	01		CO-1, L3
1.9	Significance of Elasticity of Demand	R 5,W7	2.3	2.50	Presentation	01		CO-1, L2
1.10	Demand Forecasting	R 5,W8	2.22	2.25	Presentation	02		CO-1, L4
1.11	Factors governing demand forecasting	R 5,W9	5.52	5.73	Presentation	01		CO-1, L4
1.12	Managerial Significance							CO-1, L4
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	Topic (s)	Book Reference	Page (s)	Teaching Methodology	Proposed No. of Periods	**Actual Date of Handled**	**CO/RBT**
	UNIT –II						
II	**Production & Cost Analysis**				**12**		
2.1	Production Function	R 5, R7	3.1 3.4	Demonstration	02		CO-2, L1
2.2	Isoquants and Isocosts	R7,R 5	3.5 3.43	Charts	01		CO-2, L1
2.3	MRTS, Least Cost Combination of Inputs	T1,R 5	3.46 3.48	Charts	01		CO-2, L2
2.4	Cobb-Douglas Production function	T1,R 5	3.46 3.48	Demonstration	01		CO-2, L2

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT –II							
2.5	Laws of Returns	T1,R 5	4.20	4.20	Black board	02		CO-2, L3
2.6	Internal and External Economies of Scale	T1,R 5	4.41	4.41	Black board	01		CO-2, L2
2.7	Cost Analysis: Cost concepts	T1,R 5	4.2	4.10	Demonstration	01		CO-2, L3
2.8	Break-even Analysis (BEA),	T1, R5	4.19	4.24	Demonstration	01		CO-2, L4
2.9	Determination of Break-Even Point (simple problems)	T1, R 5	4.6	4.10	Chart	01		CO-2, L4
2.10	Managerial Significance	T1, R 5	4.41	4.41	Black board	01		CO-2, L3
	Review	**Signature of the HOD/Coordinator**						
	UNIT- III							
III	**Markets & New Economic Environment**					**07**		
3.1	Types of competition and Markets	R 5, W12	5.1	5.6	Presentation	01		CO-3, L2
3.2	Features of Perfect competition	R 5, W21	5.15	5.23	Presentation	01		CO-3, L2
3.3	Monopoly and Monopolistic Competition	T1, R 5	5.24	5.25	Black board	01		CO-1, L2
3.4	Price-Output Determination in case of Perfect Competition and Monopoly	T1, R 5	5.26	5.33	Black board	01		CO-3, L3
3.5	Policies of Pricing	T1, R 5	5.52	5.73	Black board	01		CO-3, L3
3.6	Pricing: Objectives and. Methods of Pricing	T1, R 5	5.99	5.114	Black board	01		CO-3, L4
3.7	Business: Features and evaluation of different forms of Business	T1, R 5	5.99	5.114	Black board	01		CO-1, L2
3.8	Organization: Sole Proprietorship, Partnership	R5,W21	5.117	5.123	Black board	01		CO-3, L4
3.9	Joint Stock Company Public Enterprises	R 5, W12	5.135	5.140	Black board	01		CO-3, L4
3.10	their types, New Economic Environment	T1, R 5	5.150	5.155	Presentation	02		CO-3, L4
3.11	Changing Business Environment in Post liberalization scenario	R 5, W21	5.165	5.168	Black board	03		CO-3, L3

	Review	**Signature of the HOD/Coordinator**						
UNIT-IV								
IV	**Capital Budgeting**					**15**		
4.1	Capital and its significance	R 5, W12	6.1	6.5	Presentation	01		CO-4, L2
4.2	Types of Capital, Estimation of Fixed and Working capital requirements	R 5, W13	6.11	6.14	Presentation	02		CO-4, L2
4.3	Methods and sources of raising Capital	T1, R 5	6.30	6.58	Black board	02		CO-4, L3
4.4	Trading Forecast, Capital Budget, Cash Budget	T1, R 5	6.27	6.70	Black board	02		CO-4, L3
4.5	Capital Budgeting	R 5, W7,8	6.27	6.70	Presentation	02		CO-4, L3
4.6	features of capital budgeting proposals	R 5, W8,9	5.99	5.114	Presentation	02		CO-4, L4
4.7	Methods of Capital Budgeting	T1, R 5	5.99	5.114	Black board	01		CO-4, L4
4.8	Payback Method,	T1, R 5	6.114	6.126	Black board	01		CO-4, L4
4.9	Accounting Rate of return (ARR)	R 5, W12	6.130	6.134	Black board	01		CO-4, L3
4.10	Net Present Value Method (simple problems)	T1, R 5			Black board	02		CO-4, L3
	Review	**Signature of the HOD/Coordinator**						
UNIT-V								
V	**Introduction to Financial Accounting & Financial Analysis:**					**17**		
5.1	Accounting concepts and Conventions	R5,W15,16	8.1	8.2	Presentation	01		CO-5, L2
5.2	Introduction IFRS	R5,W16,17	8.2	8.7	Presentation	01		CO-5, L2
5.3	Double – Entry	T1, R 5	8.7	8.36	Black board	01		CO-5, L2
5.4	Book Keeping	T1, R 5	8.2	8.36	Black board	01		CO-5, L3
5.5	Journal, Ledger, Trial Balance	T1, R 5	8.25	8.27	Black board	01		CO-5, L3
5.6	Final Accounts Trasing Account	R 5, W18	7.1	7.2	Presentation	01		CO-5, L3
5.7	Profit and Loss Account	T1, R 5	7.31	7.38	Black board	01		CO-5, L4
5.8	Balance Sheet with	R 5, W8,9	7.42	7.45	Presentation	02		CO-5, L4

	simple adjustments							CO-5, L4
5.9	Financial Analysis: Analysis	R 5, W8,9	7.55	7.59	Presentation	01		CO-5, L5
5.10	Interpretation of Liquidity Ratios	R5,W15,16	7.62	7.67	Chart	02		CO-5, L5
5.11	Activity Ratios, and Capital structure Ratios	R5,W15,16	7.71	7.77	Chart	01		CO-5, L5
5.12	Profitability ratios. Du Pont Chart.	T1, R 5	7.79	7.82	Black board	01		CO-5, L5
	Review	**Signature of the HOD/Coordinator**						

LIST OF TEXT BOOKS AND REFERENCES

Text Books:

T1. Varshney&Maheswari: Managerial Economics, Sultan Chand, 2009

T2. S A Siddiqui&A S Siddiqui, Managerial Economics and Financial Analysis, New age International Publishers, Hyderabad 2013

T3. M Kasi Reddy &Saraswathi, Managerial Economics and Financial Analysis, PHI, New Delhi, 2012.

Reference Books:

R1. DigitalSignalProcessing–FundamentalsandApplications–LiTan,Elsevier,2008

R2. Fundamentals of Digital Signal Processing using MATLAB – Robert J. Schilling, Sandra L. Harris,Thomson,2007

R3. DigitalSignalProcessing–S.Salivahanan, A.VallavarajandC.Gnanapriya,TMH,2009

R4. Discrete Systems and Digital Signal Processing with MATLAB – Taan S. EIAli, CRC press, 2009.

R5. Digital Signal Processing: P.RAMESH BABU,3rd Edition, 2006.

Weblinks

w-1. https://www.profit-forexsignals.com/

w-2. https://ocw.mit.edu/resources/res-6-008-digital-signal-processing-spring-2011/

w-3. https://www.journals.elsevier.com/digital-signal-processing/

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 5. Creating)

	UNIT-1		
	1 Mark Questions	**BT level**	**Course Outcome**
1	Define Managerial economics and nature? (REMEMBERING)	1	CO1
2	Explain how operation research, mathematics is related to economics?(UNDERSTANDING)	2	CO1
3	Nature of the product how it is related to elasticity of demand? Explain.(UNDERSTANDING)	1	CO1
4	How barometric techniques help in estimating the demand for a product?(APPLYING)	2	CO1
5	Explain about substitutes and complementaries along with the examples? (UNDERSTANDING)	2	CO1
6	Explain about Normative statement and prescriptive actions?(UNDERSTANDING)	2	CO1
7	Define price elasticity of demand? Explain its significance?(REMEMBERING)	2	CO1
8	Explain about exponential smoothing method?(UNDERSTANDING)	3	CO1
9	Explain how many methods available for calculate demand for a product?(APPLYING)	2	CO1
10	Explain law of demand and its exceptions?(UNDERSTANDING)	1	CO1
	5 MARKS		CO1
1	Define Managerial Economics? Explain how managerial economics is linked with other academic disciplines? (REMEMBERING)	1	CO1
2	Define Managerial Economics? Explain its nature, scope& limitations? (REMEMBERING)	1	CO1
3	Is it necessary to accurately estimate the future demand for a product?	1	CO1
	How can you measure future demand for a	2	CO1

	product? (CREATING)		
4	What do you understand by elasticity of demand? Explain the factors governing it? (UNDERSTANDING)	1	CO1
5	Explain the concept of cross elasticity of demand. Illustrate your answer with suitable examples. How it is different from price elasticity of demand?((CREATING)	2	CO1
6	Define demand explain the factors determining demand? How does the analysis of demand contribute to business in decision making?(CREATING)	2	CO1
7	Define Elasticity of demand? Explain different types of elasticity of demand and its measurement.(REMEMBERING)	2	CO1
8	Define Demand estimation and explain marketing research approaches to demand Estimation?(UNDERSTANDING)	1	CO1
9	Managerial economics is multidisciplinary in nature'. Explain.(ANALYZING)	2	CO1
10	Define demand explain nature of the demand? Define Law of demand and explain various exceptions to law of demand?(UNDERSTANDING)	3	CO1

	UNIT-2		
	MARK QUESTIONS	**BT LEVEL**	**COURSE OUTCOMES**
1	Define production and production function? (REMEMBERING)	1	CO2
2	Isoquants and their features? (UNDERSTNDING)	1	CO2
3	Cobb-douglas production function? (REMEMBERING)	2	CO2
4	Explain about returns to scale? (UNDERSTANDING)	3	CO2
5	Diseconomies of scale? (REMEMBERING)	2	CO2
6	Explain about returns to factors? (UNDERSTANDING)	1	CO2
7	Least combinations of input factors?(REMEMBERING)	1	CO2
8	Explain about types of isoquants ?(UNDERSTANDING)	1	CO2
9	Define cost and cost function?(REMEMBERING)	2	CO2
10	.Explain the limitations of break even analysis?(UNDERSTANDING)	2	CO2
	5 MARK QUESTIONS	**3**	
1.	Define production and explain the nature of production function?(UNDERSTANDING)	2.	CO2
2	(a)Explain Cobb-Douglas production	3.	CO2

	function?(UNDERSTANDING)		
3	(b)Explain about least combination of input factors.	1	CO2
4.	What are the two types of production functions classified depending upon time element?((UNDERSTANDING)	5.	CO2
5	(a)Explain the Law of returns with appropriate examples?(CREATING)	2	CO2
	(b)Explain the determinants of cost with briefly(REMEMBERING)	2	CO2
6	Explain production function with two variables inputs?(UNDERSTANDING)	2	CO2
7	(a)Define Isoquant? What are the different classifications of Isoquants? (UNDERSTANDING)	2	CO2
	(b).Define cost? Explain about cost concepts in detail(UNDERSTANDING)	2	CO2
8	(a)Define Isocost and state how isocost are differently addressed?((ANALYZING)	1	CO2
	(b)Explain Law of returns to factor in the relation to output and input?(UNDERSTANDING)	1	CO2
9	are scale economies and explain the internal and external economies of scale? (UNDERSTANDING)	1	CO2
10	Define break even analysis and explain its managerial significance and limitations? (UNDERSTANDING)	1	CO2

UNIT-3			
S.NO	**1 MARK QUESTIONS**	**BT LEVEL**	**COURSE OUTCOME**
1	Define market and market structure? (UNDERSTANDING)	1	CO3
2	How many methods are there to fix the price for the product? (UNDERSTANDING)	1	CO3
3	Define business? Explain any five characteristics of business?(REMEMBERING)	1	CO3
4	What are the objectives of pricing? (UNDERSTANDING)	2	CO3
5	Explain about different types of companies? (UNDERSTANDING)	1	CO3
6	Explain about different forms of business organization?(UNDERSTANDING)	1	CO3
7	Discuss about contents Memorandum of association?(REMEMBERING)	1	CO3
8	Explain the features of perfect market? Meaning of price discrimination? (UNDERSTANDING)	1	CO3
9	Defineprospectuses? Explain about contents of	2	CO3

	prospectus? (REMEMBERING)		
10	Discuss about need of public enterprises? Define sole trader explain any three features?(UNDERSTANDING)	2	CO3
	5 MARK QUESTIONS		CO3
1.	Define Business? Explain the features, merits, demerits of partnership and joint stock companies? (REMEMBERING)	2	CO3
2	Define market and explain the different types of market? (REMEMBERING)	2	CO3
3	Explain the determination of market price in perfect competition and what are the essential conditions of perfect competition? (UNDERSTANDING)	2	CO3
4	Is Government of India justified in concept withdrawing its investments in public enterprises? Justify your answer? (CREATING)	1	CO3
5	Define pricing and explain different types of pricing? (UNDERSTANDING)	1	CO3
6	Small is beautiful'. Do you think this is the reason for the survival of the sole	2	CO3
	trader form of business organization? Support your answer with suitable example(CREATING)	2	CO3
7	Explain the need for public enterprise in India .Do you think public enterprise as a whole have fulfilled that need? (CREATING)	2	CO3
8	Explain the different types of pricing strategies? Explain the price output determination in monopoly? UNDERSTANDING)	2	CO3
9	the procedure how to start a joint stock company?(UNDERSTANDING)	2	CO3
	(b)what are advantages & disadvantages of government companies?((ANALYZING)	2	CO3
10	A.What are scale economies and explain the internal and external economies of scale? (REMEMBERING)	2	CO3
	(b) .Define break even analysis and explain its managerial significance and limitations?(ANALYZING)		CO3

	UNIT-4		
	1 MARK QUESTIONS	**BT LEVEL**	**COURSE OUTCOME**
1	Definecapital?explain about need of capital? (REMEMBERING)	1	CO4
2	Explain about fixed capital and its features? (UNDERSTANDING)	1	CO4
3	Meaning of debentures and its types? (REMEMBERING)	1	CO4

4	Define share and explain its types?(REMEMBERING)	2	CO4
5	Define working capital and explain its components?(UNDERSTANDING)	2	CO4
6	Explain about debt factoring and credit factoring?(UNDERSTANDING)	3	CO4
7	What is the meaning of retained profits? (REMEMBERING)	3	CO4
8	Explain any five factors determining requirements of working capital?(UNDERSTANDING)	3	CO4
9	Explain about different sources of finance?(UNDERSTANDING)	4	CO4
10	Explain about hire purchase v_s leasing? (ANALYZING)	2	CO4
	5 MARK QUESTIONS	**2**	CO4
1	Define capital budgeting and explain its features and Merits and demerits? (UNDERSTANDING)	1	CO4
2	.Explain in how many ways capital budgeting is calculated?(APPLYING)	2	CO4
3	Explain the nature and importance of capital budgeting? (REMEMBERING)	2	CO4
4	Review the appropriateness of the following criteria of appraising investment (APPLYING)		CO4
	(a) pay-back period	1	CO4
	(b) net present value	1	CO4
	(c) pro_fitability index	1	CO4
5	Capital Budgeting is the process of evaluating the relative worth of long-term in-vestment proposals based on their profitability? Explain this statement.(CREATING)	2	CO4
			CO4
6	Consider the following paticulars and calculate NPV & ARR.(APPLYING)	2	CO4
	Year project x (in.lakhs) project y(in lakhs)		
	1 3 6		
	2 5 4		
	3 6 3		
	Capital :900000,cost of capital:12%		
7	Define capital? Explain need and sources of finance? (REMEMBERING)	2	CO4
8	ABC Co. ltd is proposing to mechanize their operation .two proposal A and B in thre form of quotations have been received from two different vendors.The proposal in each case cost Rs.5,00,000.Adiscount factor of 12% is used to compare the proposal .cash inflows are as follows (APPLYING).	3	CO4

Cash flows after taxes

Year	ProposalA	ProposalB

1	150000	50000
2	200000	150000
3	250000	200000
4	150000	300000
5	100000	200000

Calculate Traditional & Modern Methods.

9. ABC company is considering the purchase of a machinery from the following.(APPLYING)

Particulars	Machine-I	Machine-II
Life	3years	3years
Initial investment	10000	10000
Net earnings after tax	Rs.	Rs
1st year	8000	2000
2nd year	6000	7000
3rd year	4000	10000

You are required to suggest which machine should be preffered by using the following methods.

The cost capital is 10%. (a)pay back method (b)discounted cash flow method.

UNIT-5		
Short answer questions:		
1.Define accounting and explain its significance (REMEMBERING)		
2.explain about different types of acconuts and their rules?((REMEMBERING)		
3.Definition of ratio anlaysis?(REMEMBERING)		
4. A firm sold goods worth Rs.1,00,000 and its gross profit is 20% of sale value.The inventory at the beginning of the year was Rs.32000 and at the end of the year was 14,000.Compute inventory turnover ratio.(APPLYING)		
5. Explain any five terminology of accounts?(UNDERSTANDING)		
6. A firms sales during the year was Rs.400,000 of which 60% were on credit basis .The balance of debtors at the beginning and the end of the year were 25000 and 15000 respectively .calculate debtors turnover ratio of the firm?(APPLYING)		
7.How many types of ratios are available?(REMEMBERING)		
8. What is the meaning of provision of bad debts and how it is treated in final accounts? (APPLYING)		

9. What is the meaning of drawings and how it is treated in balance sheet (APPLYING)		
10. Given that the number of shares is 10,000 and the net profit after taxes for a given accounting period is Rs.4,50,000.calculate EPS.(APPLYING)		
Long answer questions:		
1. Explain different phases that are involved in the accounting mechanism? (UNDERSTANDING)		
2. From the following Trial balance extracted from the books of MERCHANT for the period of 31st march2005. Prepare the final accounts?(APPLYING)		

PARTICULARS	**DEBIT BALANCE**	**CREDIT BALANCE**		
Furniture	640	-		
Building	6250	-		
Plant and machinery	7500	-		
Stock	3400	-		
Purchases	6000	-		
Advertising	1000	-		
Cash	1200	-		
Salaries	3000	-		
Insurance	800	-		
Debtors	2000			
Capital	_	12500		
Sales	-	15000		
Creditors	-	4290		
TOTAL	**31790**	**31790**		

Adjustments

i. closing stock Rs. 2000
ii. depreciation on building @5%
iii. salaries outstanding Rs.300
iv. Insurance prepaid Rs. 100.
v. Interest on capital @5%
vi. Bad debts Rs.100.

3. From the trail balance of Mr. S, Prepare Final Accounts for the period 31st march 2007? (APPLYING)

PARTICULARS	**DEBIT AMOUNT**	**PARTICULARS**	**CREDIT AMOUNT**
Plant and machinery	1,00,000	Sales	3,50,000
Good will	50,000	Returns outward	12,000
Patents	25,000	Discount received	8,000
Purchases	2,50,000	Commission received	12,000
Return in wards	5,000	Sundry creditors	20,000

Discount	4,000	Bank over draft	30,000
Wages	15,000	Capital	1,00,000
Insurance	8,000	Bills payable	20,000
Sundry debtors	25,000	-	-
Bad debts	3,000	--	-
Carriage inwards	3,000	-	-
Carriage outwards	2,000	-	-
Furniture	30,000	-	-
Office salaries	26,000	-	-
Audit fees	6,000	-	-
TOTAL	**5,52,000**	-	**5,52,000**

Adjustment:

1) Closing stock Rs90, 000
2) Depreciation on plant & machinery@10% & furniture@15%
3) Make a provision for doubtful debts @5% on sundry debtors

4. From the following data pass necessary Journal entries? (APPLYING)

Jan 1st 2005 business commenced with cash Rs. 10,000

Jan 3rd goods purchased from X Rs.5,000

Jan 4th goods sold to Mahesh Rs. 2,500

Jan 5th cash received from Raghu Rs. 3,000

Jan 6th cash paid to Shiva Rs. 4,000

Jan 7th cash sales Rs. 2,000

Jan 8th goods purchased from X Rs. 1,500 for cash

Jan 9th cash withdrawn from bank for personal use Rs. 1,000

Jan 10th rent paid Rs. 2,000

Jan 11th salaries paid Rs. 3,000

5.(a)Distinguish between Trail Balance and Balance Sheet?(ANALYZING)

(b) Distinguish between Profit and Loss account and balance sheet?(ANALYZING)

(c)What is accounting? What are its objectives, functions, Advantages and limitations?((UNDERSTANDING)

(d)Explain accounting concepts and conventions?(UNDERSTANDING)

6. What is Ratio Analysis? Explain its Classifications(REMEMBERING)

7.The following is the balance sheet of A limited as on 31.12.90(APPLYING)

IABILITIES	**MOUNT**	**SSETS**	**MOUNT**
hare capital(2000 shares of Rs 10 each, Rs 5 paid up)	0000	and and Building	5000
eserves and Surplus	000	ant and Furniture	000
% Debentures	0000	ock	000
reditors	000	ebtors	000
ills Payable	00	ills Receivable	00
		ash at Bank	000

		eliminary Expenses	00
	0000		**0000**

Sales for the year Rs 600000. Calculate the following ratios.

a. Debt / Equity Ratio.
b. Proprietary Ratio.
c. Current Ratio.
d. Acid test ratio.
e. Stock turnover ratio.
f. Avg Collection period.

8. From the following Balance sheet Calculate (APPLYING)

a. Current Ratio.
b. Quick Ratio.
c. Absolute Quick Ratio.
d. Debt / Equity Ratio.
e. Proprietary Ratio.
f. Solvency Ratio.
g. Fixed assets ratio.
h. Capital gearing ratio.
i. Fixed assets to network.

IABILITIES	**MOUNT**	**SSETS**	**MOUNT**
quity share capital	,00,000	ood Will	00,000
% Preference Share capital	00,000	ant and machinery	00,000
eneral Reserve	0000	and and building	0000
ofit and Loss	0000	niture	0000
2% debentures	0000	ock	0000
reditors	000	ills Receivable	000
ank Overdraft	000	ebtors	0000
ills payable	4000	ank balance	0000
ovision for taxation	6000	arketable Securities	000
	00000		00000

9. What are the limitations ratio?Does ratio analysis really measure the financial performance of a company?(REMEMBERING)

10. From the following particulars given in the comparative balance sheet of Bhaskara Chemicals Ltd. You are required to calculate(APPLYING)

a. Current Ratio.
b. Quick Ratio.
c. Ratio of Inventory to working capital.

And give your comments.

iabilities	**6(Rs)**	**07(Rs)**	**ssets**	**06(Rs)**	**7(Rs)**
undry Creditors	000	0000	ventory	0000	000
ills Payable	000	0000	undry Debtors	0000	000
ank Over draft	---	0000	dvance payment	000	----

apital	000	0000	ash at bank	0000	000
			ash in hand	0000	00
			xed assets	0000	00
	0000	**50000**		**00000**	**0000**

D4

Subject Code: R18MBA2201

III B.Tech I Semester (REGULAR) End Examinations March - 2021

BUSINESS ECONOMICS AND FINANCIAL ANALYSIS

09/03/2021 (Common to EEE, MECH, ECE, CSE, IT.) Day- 1

Duration: 3 Hrs **Marks: 5Qx14M = 70M**

Answer *FIVE* questions (Treat Q.No.11 as a single question).

UNIT-I

1. What is Elasticity of demand? Explain the broad classification of Elasticity of Demand.

(OR)

2. What is the nature and scope of business Economics?

UNIT-II

3. Elucidate the Cobb-Douglas production function.

(OR)

4. Explain the concept of cost-volume profit analysis.

UNIT-III

5. Explain the features of perfect competition.

(OR)

6. Elucidate the company form of Organization.

UNIT-IV

7. What are the characteristics of fixed capital and working capital?

(OR)

8. Suresh Krishna is evaluating a project whose expected cash flows are as follows:

YEAR	CASH FLOWS (Rs.)
0	10,00,000
1	1,00,000
2	2,00,000
3	3,00,000
4	6,00,000

What is the NPV of the project if the discounted rate is 12% for the entire period?
Note: PV: 1styr is 0.8928, 2ndYr is 0.7972, 3rdYr is 0.7117 & 4thYr is 0.6355.

P.T.O.

UNIT-V

9. From the following information make out a Balance sheet with as much details as possible:
Current ratio 2.5
Liquidity ratio 1.5
Proprietary ratio 0.75 (Assets / Proprietary fund)
Working capital Rs.60,000
Bank Overdraft Rs.10,000
Reserves and surplus Rs.40,000
There is no long term or fictitious assets.

(OR)

10. Explain the importance of Ratio analysis as a technique for analyzing financial statements.

11. Answer any *THREE* questions from the following. (5M+5M+4M)

a) Briefly explain the concept of "Elasticity".
b) Write short notes on the nature of Managerial economics.
c) Write short notes on Partnership firm
d) Differentiate between Current ratio and Quick ratio
e) Write short notes on Break even analysis.

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SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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MBA I YEAR - I SEMESTER – END EXAMINATIONS (Regular) – January - 2020

R18MBA02 – BUSINESS ECONOMICS

Duration: 3 Hrs **24.01.2020Max Marks: 70M**

Section - A

Answer *All* the following questions **Marks: 5Qx4 = 20M**

1. Explain concept of time perspective.
2. What is measurement of elasticity?
3. Define isoquant and isocost concept.
4. Give a short note on product life cycle.
5. Write short notes onMonetary Policy.

Section - B

Answer any *FIVE* questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT - I

6. Justify Business Economics relation with other disciplines.

(OR)

7. a) What do you understand about opportunity cost?
   b) Explain discounting principle with suitable example.

UNIT - II

8. a) What are determinants of supply.
   b) Define law of supply with sketch.
   c) What is supply function?

(OR)

9. Explain in detail about demand forecasting methods.

UNIT - III

10. Define production function. How can a producer find it useful? Illustrate.

(OR)

11. Explain law of returns with appropriate examples.

UNIT - IV

12. a) Define break even analysis. How do you determine it? Show graphical presentation of BEA.
    b) State the assumptions in break – even analysis.

(OR)

13. What strategies do you recommend for the markets obsessed with stiff competition conditions?

UNIT - V

14. Write the objectives and types of fiscal policy.

(OR)

15. Explain in detail about Macro Economic Analysis (PESTEL MODEL).

Subject Code:R18MBA02

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MBA I YEAR - I SEMESTER – END EXAMINATIONS (REGULAR) – Dec'2018/Jan'2019

BUSINESS ECONOMICS

Duration: 3 Hrs **31.12.2018 Max Marks: 70M**

Section - A

Answer *All* the following questions **Marks: 5Qx4M = 20M**

1. Define nature and scope of economics.
2. Explain in detail need for demand forecasting.
3. Define the concept of MRTS.
4. Difference between monopoly and monopolistic competition.
5. Write short notes on Fiscal Policy.

Section - B

Answer any *FIVE* questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT - I

6. What is the roll of business economist in an organization?

(OR)

7. a) Explain briefly about business decision making process.
   b) Elaborate the concept of opportunity cost.

UNIT - II

8. a) What are determinants of demand?
   b) Define law of demand with sketch.
   c) What are its exceptional cases?

(OR)

9. Explain briefly about elasticity of supply.

UNIT - III

10. Explain how cost – output relationship helps the entrepreneurs in expansion decisions.

(OR)

11. Discuss the economics of scale that accrue to a firm.

UNIT - IV

12. Explain how the price is determined in case of perfect competition. Illustrate.

(OR)

13. a) Explain the concept of price discrimination.
    b) Explain pricing strategies.

UNIT-V

14. Comment on new industrial policy of 1991 with recent developments.

(OR)

15. Briefly explain about Foreign Direct Investment (FDI).

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NAAC
NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

HANDOUT

Fourth Year CSE- Semester II

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2022-23

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

HANDOUT- INDEX

SRI INDU COLLEGE OF ENGINEERING &TECHNOLOGY
B. TECH COMPUTER SCIENCE AND ENGINEERING

INSTITUTION VISION

To be a premier institution in engineering & technology and management with competence, 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 economic and technological development of the region, state and nation.

DEPARTMENT VISION

To be a technologically adaptive centre for computing by grooming the students as top notch professionals

DEPARTMENT MISSION

DM1: To offer quality education in computing.

DM2: To provide an environment that enables overall development of all the stakeholders.

DM3: To impart training on emerging technologies like Data Analytics, Artificial Intelligence and Internet Of Things.

DM4: To encourage participation of stakeholders in research and development.

PROGRAM EDUCATIONAL OBJECTIVES(PEO's)

PEO 1: Graduates with strong foundation in mathematical and core concepts, which enable them to participate in research, in the field of Computer Science.

PEO 2: Graduates with application development, problem solving skills by learning the computer programming methods of the industry and related domains.

PEO 3: Graduates with multidisciplinary knowledge by understanding the scope of association of computer science engineering along with other engineering disciplines.

PEO 4: Graduates with communication skills, soft skills, organizing skills which build the professional qualities, understand the social responsibilities and ethical attitude.

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

PO	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 modeling 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 and1`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	
PSO 1	**Software Development:** To apply the knowledge of Software Engineering, Data Communication, Web Technology and Operating Systems for building IOT and Cloud Computing applications.
PSO 2	**Industrial Skills Ability:** Design, develop and test software systems for world-wide network of computers to provide solutions to real world problems.
PSO 3	**Project implementation:** Analyze and recommend the appropriate IT Infrastructure required for the implementation of a project.

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTCOMES (CO's)

COURSE NAME: INFORMATION SECURITY FUNDAMENTALS (R18INF4295)

Course Outcomes (COs)	
C423.1	Understand the Information security and various Attacks. Analyze the effectiveness of passwords in access control.
C423.2	Understand the basic concepts of Cryptography, encryption and decryption techniques of various communication channels.
C423.3	Understand the Various network security applications, IPSec, Web security, Email security, and Kerberos, X.509 etc.
C423.4	Apply firewall principles, honey pots, IDS,IPS, authentication, mechanisms.
C423.5	Analyze diverse viewpoints to ethical dilemmas in the information technology field and recommend appropriate actions.
C423.6	Understand the role of third-party agents in the provision of authenticationservices

SRI INDU COLLEGE OF ENGINEERING ANDTECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Mapping of Course Outcomes(CO's) with PO's / PSO's:

Course Articulation Matrix

COURSE NAME: (R18INF4295) Information Security Fundamentals

CO	PO											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C423.1	3	2	-	-	-	-	-	-	-	-	-	-
C423.2	3	3	3	-	-	-	-	-	-	-	-	-
C423.3	2	3	3	3	-	-	-	-	-	-	-	-
C423.4	2	3	2	2	-	-	-	-	-	-	-	-
C423.5	2	3	3	2	-	-	-	-	-	-	-	-
C423.6	2	2	3	3	-	-	-	-	-	-	-	-
C423	**2.33**	**2.67**	**2.8**	**2.5**	-	-	-	-	-	-	-	-

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CO-PO/PSO MAPPING

C423.1	Master Able to Understand the need of Security

Mapped POs: PO1, PO2

PO1	Student gains knowledge on cryptography and network security
PO2	Student identifies the advantages of cryptographyand network security

C423.2	Master understanding of symmetric and asymmetric encryption systems, various attacks

Mapped POs: PO1, PO2, PO3

PO1	Student gains knowledge about information security Implementation.
PO2	Student analyses the problems related how an application communicates with hardware.
PO3	Student will be able to overcome the problems of security attacks Implementation.

C423.3	Master the role of third-party agents in the provision of authentication services.

Mapped POs: PO1, PO2, PO3, PO4

PO1	Student gains knowledge about the agents, third party criteria
PO2	Analyses problems related to security .
PO3	Student compares various attacks and authentication services
PO4	Designs different problems of security attacks and authentication services

C423.4	Comprehend and apply authentication, email security, web security services and mechanisms.

Mapped POs: PO1, PO2, PO3,PO4

PO1	Student gains knowledge about different securities
PO2	Analyses different services and mechanisms
PO3	Overcomes security attack problems
PO4	Design different email and web securities

C423.5	Master different protocol like SSL, TLS Vis-à-vis their applications

Mapped POs: PO1, PO2, PO3, PO4

PO1	Student gains knowledge about different protocols
PO2	Analyses SSL,TSL applications
PO3	Compares various protocols
PO4	Students are able to Implement different protocols

C423.6	Master the effectiveness of passwords in access control, security services and mechanisms.

Mapped POs: PO1, PO2, PO3, PO4

PO1	Student gains knowledge about effectiveness of passwords
PO2	Student Analyses the problems related to passwords
PO3	Student designs the different passwords and mechanisms
PO4	Provides protection by using security services

Sri Indu College of Engineering &Technology

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Department of Computer Science & Engineering

ROOM NO: 403

Class: IV CSE-A (II SEM) **Time - Table**

w.e.f:20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	DS	ISF	OB	L U N C H	ISF	OB	DS
Tuesday	OB	DS	ISF		OB	DS	ISF
Wednesday	ISF	OB	DS		DS	ISF	OB
Thursday	---------- Project Work--------				------ Project Work-----		
Friday	----------Project Work-------				------Project Work----		
Saturday	---------- Project Work--------				--- Project Work----		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mr.M.Sathyam
DS	Distributed Systems	Mr. S.Sathvik Prasad
ISF	Information Security Fundamentals	Dr. K.S.Sadhasiva Rao
PW	Project Work	Mr. S.Sathvik Prasad

Class Co-Ordinator **DEAN** **HOD**

Mr. S.Sathvik Prasad

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)

Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 402

Class: IV CSE-B (II SEM) **Time - Table**

w.e.f: 20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	ISF	OB	DS	L U N C H	OB	DS	ISF
Tuesday	DS	ISF	OB		DS	ISF	OB
Wednesday	OB	DS	ISF		ISF	OB	DS
Thursday	---------- Project Work----				---------- Project Work--		
Friday	----------Project Work----				----------Project Work--		
Saturday	---------- Project Work----				---------- Project Work--		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mrs.T.Madhavi
DS	Distributed Systems	Mr. S.Sathvik Prasad
ISF	Information Security Fundamentals	Mrs.K.Vijayalakshmi
PW	Project Work	Mr. S.Sathvik Prasad

Class Co-Ordinator **DEAN** **HOD**

Mr.S.Sathvik prasad

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Department of Computer Science & Engineering

ROOM NO: 416

Class: IV CSE-C (II SEM) **Time - Table**

w.e.f: 20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	OB	DS	ISF	L U N C H	DS	ISF	OB
Tuesday	ISF	OB	DS		ISF	OB	DS
Wednesday	DS	ISF	OB		OB	DS	ISF
Thursday	----- Project Work-----				---- Project Work----		
Friday	-----Project Work-----				-----Project Work----		
Saturday	---- Project Work----				--- Project Work----		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mrs.I.Mahalakshmi
DS	Distributed Systems	Dr. T. Charansingh
ISF	Information Security Fundamentals	Mr.B.Suresh
PW	Project Work	Ms.G.Swarnalatha

Class Co-Ordinator **DEAN** **HOD**

Mr.B.Suresh

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Department of Computer Science & Engineering

ROOM NO: 417

Class: IV CSE-D (II SEM) **Time - Table**

w.e.f: 20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	DS	ISF	OB	L U N C H	ISF	OB	DS
Tuesday	OB	DS	ISF		OB	DS	ISF
Wednesday	ISF	OB	DS		DS	ISF	OB
Thursday	---- Project Work--				---- Project Work-----		
Friday	----Project Work----				---Project Work-----		
Saturday	----- Project Work-----				---- Project Work----		

SUBJECT CODE	**SUBJECT NAME**	**FACULTY NAME**
OB	Organizational Behavior	Mr.Jaya Krishna
DS	Distributed Systems	Dr. T. Charansingh
ISF	Information Security Fundamentals	Mr.B.Suresh
PW	Project Work	Ms.G.Swarnalatha

Class Co-Ordinator **DEAN** **HOD**

Mr.B.Suresh

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D4

BR-18

Lr.No.SICET/AUTO/DAE/IV B.Tech Academic Calendar/306/2022 Dt: 01.08.2022

Dr.G. SURESH,
Principal,

To,
All the HODs.

IV B.TECH I SEM & II SEM ACADEMIC CALENDAR
ACADEMIC YEAR : 2022-23

Sir,

Sub: SICET (Autonomous) - Academic & Evaluation - Academic Calendar for **B.Tech – 4th Year** - For the academic year **2022-23** – Reg.

***

The approved Academic Calendar for **B.Tech – 4th Year (I & II Sem)** for the academic year **2022-23** is given below:

Academic Calendar for B.Tech – 4th Year Students
(2019 - 20 Batch), BR-18 Regulation.

I - Semester

Commencement of I Semester class work	**25.08.2022 (Thursday)**	
I Spell of Instructions (Including Dussehra Holidays).	25.08.2022	26.10.2022 - 9 Weeks
Dussehra Holidays.	03.10.2022	08.10.2022 - 1 Week
I Mid Term Examinations for IV B.Tech I Sem Students.	27.10.2022	29.10.2022 - 3 Days
II Spell of Instructions.	31.10.2022	24.12.2022 - 8 Weeks
II Mid Term Examinations for IV B.Tech I Sem Students.	27.12.2022	29.12.2022 - 3 Days
Preparation Holidays, Practical Examinations and Remedial Mid Test (RMT).	30.12.2022	07.01.2023 - 9 Days
IV B.Tech I Semester End Examinations (Main) and Supplementary Examinations.	09.01.2023	25.01.2023 - 2 Weeks 3 Days
Sankranti Holidays.	13.01.2022	16.01.2022 - 4 Days
Commencement of class work of IV B.Tech II Semester - 27.01.2023 (Friday)		

II - Semester

Commencement of II Semester class work	**27.01.2023 (Friday)**	
I Spell of Instructions.	27.01.2023	23.03.2023 - 8 Weeks
I Mid Examinations for IV B.Tech II Sem Students.	24.03.2023	25.03.2023 - 2 Days
II Spell of Instructions.	27.03.2023	20.05.2023 - 8 Weeks
II Mid Examinations for IV B.Tech II Sem Students.	22.05.2023	23.05.2023 - 2 Days
Preparation Holidays, Project Evaluation and Remedial Mid Test (RMT).	24.05.2023	31.05.2023 - 8 Days
IV B.Tech II Semester End Examinations (Main) and Supplementary Examinations.	01.06.2023	07.06.2023 - 1 Week

ACE CE DIRECTOR PRINCIPAL

Copy to DAE,
Copy to all the Heads of the Depts.

CONTROLLER OF EXAMINATIONS
Sri Indu College of Engineering & Technology
(An Autonomous Institution under JNTUH)
Sheriguda (V), Ibrahimpatnam, R.R. Dist-501510.

DIRECTOR
(Academic Audit)
Sri Indu College of Engineering & Technology
Sheriguda, IBP, R.R. Dist-501510.

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

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

Academic CALENDAR – 2022-2023 (SEMESTER-1)

DAYS	SEPTEMBER'22	OCTOBER '22	NOVEMBER '22	DECEMBER '22	JANUARY'23	FEBRUARY'23
SUNDAY						
MONDAY			1			
TUESDAY			2			1
WEDNESDAY			3			2
THURSDAY			4			3
FRIDAY		1 Bathukamma Celebrations	5			4
SATURDAY		2 Gandhi Jayanti/ HOLIDAY	6 HOLIDAY	HOLIDAY	NEW YEAR/ HOLIDAY	5 HOLIDAY
SUNDAY	HOLIDAY	3 DASARA HOLIDAYS	7		PRACTICAL EXAM	6
MONDAY		4 DASARA HOLIDAYS	8 GURUNANAK JAYANTHI		PRACTICAL EXAM	7
TUESDAY		5 DASARA HOLIDAYS	9		PRACTICAL EXAM	8
WEDNESDAY		6 DASARA HOLIDAYS	10		PRACTICAL EXAM	9
THURSDAY		7 DASARA HOLIDAYS	11		PRACTICAL EXAM	10
FRIDAY	Ganesh Nimajanam	8 DASARA HOLIDAYS	12		PRACTICAL EXAM	11
SATURDAY		9 HOLIDAY	13 HOLIDAY	HOLIDAY	H OLIDAY	12 HOLIDAY
SUNDAY	HOLIDAY	10	14		END EXAMINATION	13
MONDAY	Commencement of Classes (III, IV Yr)	11	15		END EXAMINATION	14
TUESDAY	IV-YEAR CRT TRAINING	12	16		END EXAMINATION	15
WEDNESDAY	IV-YEAR CRT TRAINING	13	17		END EXAMINATION	16
THURSDAY	IV-YEAR CRT TRAINING	14	18		BHOGI	17

FRIDAY		IV-YEAR CRT TRAINING	15		19					SANKRANTHI	18			
SATURDAY		Telangana vimochana dinostavam	16	HOLIDAY	20	HOLIDAY		HOLIDAY		HOLIDAY	19	HOLIDAY		

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B. Tech.-IV Year– II Semester	OPENELECTIVE- III	L	T	P	C
		3	0	0	3

(R18INF4295) Information Security Fundamentals

COURSEOBJECTIVES:

1. ToprovideimpeccableknowledgeonvarioustechnicalaspectsofInformationSecurity&ComputerSecurityprinciples
2. To provide foundation for understanding the key issues associated with protecting Computer Systems & Information Assets.
3. To provide competency in designing consistent & reasonable Information security system with appropriate Scanning &Enumeration mechanisms, determining the level of protection and Response to security incidents.

UNITI: Introduction to Information Security- Introduction to Information Security, Need for Security - Threats to security & Attacks, Computer System Security and Access Controls – System access and data access.

UNIT II: Communication Security-Introduction to cryptography, cryptosystems, encryption and decryption techniques, classical encryption techniques, communication channel used in cryptographic system, various types of ciphers, cryptanalysis, hash function and data integrity, security of hashing function.

UNIT III: Network - Introduction to Network Security, Email Security, IP Security, Web Security, Kerberos, X.509techniques.

UNITIV:Scanning&EnumerationTechnology-Malicioussoftware,Firewalls,Honeypots,Intrusion Detection system, Intrusion Prevention system

UNIT V: Ethics In Information Security - Implementing Information Security, Legal Ethical & Professional issues in Information Security, Contemporary Topics.

TEXTBOOKS:

1. MattBishop,"ComputerSecurity:ArtandScience",Addison-WesleyProfessional,FirstEdition,2003.ISBN:0201440997.
2. William Stallings, "Cryptography and Network Security", Pearson Education, Fourth Edition,2006.ISBN:8177587749

REFERENCES:

1. MichaelE.Whitman,HerbertJ.Mattord,"PrinciplesofInformationSecurity"CengageLearning,FourthEdition,2010,ISBN:1111138214
2. Charlie Kaufman, Radia Perlman, Mike Speciner, "Network security: private communication in a publicworld",SecondEdition,ISBN:0130460192.
3. Dieter Gollmann, "Computer Security", Third Edition,ISBN:0470741155.

	SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY **LESSON PLAN** **(Regulation :R18)** **Department of Computer Science and Engineering**	**Page: 17 -3**
	Sub. Code & Title	**R18INF4295 INFORMATION SECURITY FUNDAMENTALS**
	Academic Year: 2022-23	**Year/Sem./Section** **II/I/ A,B,C,D**
	Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :** Mrs K.Vijayalakshmi , Mr.B.Suresh

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-I							
1	**INTRODUCTION - INFORMATION SECURITY**					**10**		
1.1	Introduction to Information Security	T1	1	2	Black board	01		CO1,L2
1.2	Need for Security	T1	3	8	Black board	02		CO1,L6
1.3	Threats to security & Attacks	T1	11,102	14,105	Black board	02		CO1,L1
1.4	Computer System Security	T1	14	18	Black board	01		CO1,L2
1.5	Access Controls	T1	136	140	Black board	02		CO1,L2
1.6	System access and Data access	T1			Black board	02		CO1,L1
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	**Topic (s)**	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-II							
2	**COMMUNICATION SECURITY**					**14**		
2.1	Introduction to cryptograph.	T1	288	295	Black board	01		CO2,L1
2.2	Cryptosystems	T1	288	289	Black board	01		CO2,L2
2.3	Encryption & Decryption Techniques	T1	289	290	Black board	02		CO2,L1
2.4	Classical Encryption Techniques	T1			Black board	02		CO2,L2
2.5	Communication channel used in Cryptographic System,	T1	407	408	Black board	02		CO2,L1
2.6	Various types of ciphers	T1	299	305	Black board	02		CO2,L2

2.7	Cryptanalysis	T1	305	306	Black board	01		CO2,L3
2.8	Hash function and Data integrity	T1	311, 378	312, 379	Black board	02		CO2,L4
2.9	Security of Hashing function	T1			Black board	01		CO2,L1
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	**Topic (s)**	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-III							
3	**NETWORK**					**08**		
3.1	Introduction to Network Security	T1	299,322	300,323	Black board	02		CO3,L2
3.2	Email Security	T1			Black board	01		CO3,L3
3.3	IP Security	T3	661	662	Black board	01		CO3,L1
3.4	Web Security	T2	441	443	Black board	01		CO3,L1
3.5	Kerberos	T1,T2	152,324	153, 340	Black board	01		CO3,L3
3.6	X.509 techniques	T1	341	349	Black board	02		CO3,L3
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-IV							
4	**SCANNING & ENUMERATION TECHNOLOGY**					**08**		
4.1	Mallicious Software	T1	99, 355	99, 355	Black board	02		CO4,L2
4.2	Firewalls	T1	108,341	108,344	Black board	01		CO4,L1
4.3	Honey Pots	T1	392	392	Black board	01		CO4,L2
4.4	Intrusion Detection System	T1	234	238	Black board	02		CO4,L1
4.5	Intrusion Prevention System	T1	241	266	Black board	02		CO4,L6
	Review	**Signature of the HOD/Coordinator**						

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							
5	ETHICS IN INFORMATION SECURITY					**10**		
5.1	Implementing Information Security	T1	456	456	Black board	02		CO5,L2
5.2	Legal Ethical & Professional Issues in Information Security	T1	452	487	Black Board	04		CO5,L2
5.3	Contemporary Topics	T1	433	445	Black board	04		CO5,L1
	Review	**Signature of the HOD/Coordinator**						

TEXT BOOKS:

T1. Fundamentals of Information Systems Security:David Kim, Michael G.Solomon, 3rd Edition
T2. Cryptography and Network Security: William Stallings, Pearson Education, 4th Edition
T3.Cryptography and Network Security: William Stallings, Pearson Education, 7th Edition
T4. Cryptography and Network Security: Atul kahate, Mc Graw Hill, 3rdEdition
T5. Cryptography and Network Security: William Stallings, Pearson Education, 2nd Edition

REFERENCE BOOKS:

R1. Cryptography and Network Security: C K Shyamala, N Harini, Dr. T R Padmanabhan, Wiley India, 1st Edition

R2.Criptography and network Security, Forouzn Mukhopadhyay ,McGraw Hill,2nd edition

R3.Information Security, Principles and Practice: Mark Stamp, Wiley India

R4.Principles of Computer Security: VM Arthur Conklin, Greg White, TMH

R5.Introduction to Network Security: Neal Krawetz, CENGAGE Learning.

R6.Network Security and Cryptography: Bernard Menezes, CENGAGE Learning.

Web Links:

W1:https://nptel.ac.in/courses/106105031/39

W2:http://www.cs.wm.edu/~hnw/courses/cs454/notes/lecture17_email.pdf

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R18)** **Department of COMPUTER SCIENCE AND ENGINEERING**	**Prepared on Rev1:** **Page:** 1**of 6**

Sub. Code & Title	**(R18INF4295) INFORMATION SECURITY FUNDAMENTALS**		
Academic Year: 2022-23		**Year/Sem./Section**	**IV-I A,B,C,D**
Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :** Mrs K.Vijayalakshmi , Mr.B.Suresh		

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 6. Creating)

UNIT-1: Introduction to Information Security			
1 MARKSQUESTIONS		**BT Level**	**Course Outcome**
1.	What are the types of security attacks? **(R16-DEC 19)**	1	CO1
2.	Define plaintext and cipher text?	1	CO1
3.	Define Cryptography?	1	CO1
4.	Define encryption and decryption.	1	CO1
5.	Define Information Security?	1	CO1
6.	What is meant by authentication and availability?	1	CO1
7.	List briefly categories of security mechanisms?	1	CO1
8.	Simplify model for Network Security?	4	CO1
9.	Distinguish symmetric and asymmetric key cryptography?	4	CO2
10.	Define steganography?	1	CO2
11.	Define cryptanalysis?	1	CO1

5 MARKS QUESTIONS			
1.	Write in detail about security attacks, services, mechanisms?	2	CO1
2.	With a neat diagram write about a model for Network security.**(R16-MAR21 & R16-OCT20 & R16-DEC19)**	2	CO1
3.	Write the types of security attacks withexample?	1	CO2
4.	Distinguish between symmetric key and asymmetric key cryptography.	4	CO2
5.	a. Write about substitutiontechniques. b. Write about transpositiontechniques.	2	CO2

6.	Define Caesar cipher? And calculate the encryption and decryption for the following plain text P=”COME TO MY HOME” by using caser cipher with Key k=3?	1	CO1
7.	Construct all kinds of cipher techniques in the cryptography?	4	CO1
8.	Classify the following plain text message P=”come to my home today using Row Transposition.	4	CO2
9.	Classify the following plain text P=”TRUST MEE” into cipher text by Caesar cipher with key k= 4.	4	CO2
10.	Classify the following plain text message P=0110111 into cipher text by using one-time pad cipher with key K=1011001.calculate both encryption and decryption for the above message.	4	CO2

Unit -II : COMMUNICATION SECURITY			
1 MARK QUESTIONS			
1.	What are the components of conventional encryption principles?	1	CO3
2.	What are the Conventional encryption algorithms?	1	CO3
3.	What are public key cryptosystems algorithms?	1	CO3
4.	What are applications of public key cryptography?	1	CO3
5.	Define product cipher?	1	CO3
6.	Explain RC4 Location?	2	CO3
7.	Determine session key and master key?	5	CO3
8	Determine link and end-to-end encryption?	5	CO3
9.	Simplify the design criteria of block cipher?	4	CO3
10.	Explain advantages of counter mode?	2	CO3

5 MARKS QUESTIONS			
1	Discuss Feistel's cipher structure with a neat diagram?	6	CO3
2.	Write in detail about simple-DES and AES.	2	CO3
3.	Write about the various key distribution methods?	2	CO3
4.	Prove encryption and decryption using RSA algorithm for a)p=3,q=11,e=7,m=5 b)p=11,q=13,e=11,m=7. **(R16-MAR21 & R16-OCT20)**	5	CO3
5.	Discuss ate RSA and Diffie Hellman algorithm.	6	CO3
6.	Show AES encryption and decryption process with neat sketch?	2	CO3
7.	Explain briefly about RSA algorithm and IDEAin a detail manner?	2	CO3
8	Explain about Blowfish Algorithm with example	2	CO3
9	Explain briefly how diffusion and confusion increases complexity to thwart the cryptanalyst?	2	CO3
10	Explain all the principles of the public key crypto systems? **(R14-NOV/DEC 17)**	2	CO3

Unit – III : NETWORK			
1 MARK QUESTIONS			
1.	Define digital signature?	1	CO4
2.	What are advantages and disadvantages of Kerberos?	1	CO4
3	What is Hash function?	1	CO4
4.	Define Message Authentication code?	1	CO4
5	What are the parameters of HMAC algorithms?	1	CO4
6.	Discuss HMAC and CMAC?	6	CO4
7	Extend key principles of Biometric Authentication?.	2	CO4
8.	Enumerate uses of public key cryptography?	1	CO4
9.	Explain the rules of public and private key?	2	CO4
10.	Define digital signatures?	1	CO4

5 MARKS QUESTIONS			
1.	Write in detail about Digital signature? **(R16-DEC 19 & R14 NOV/DEC 17)**	2	CO4
2	What is X.509 authentication service? **(R16-DEC 19)**	1	CO4
3.	Write short notes on message authentication code?	2	CO4
4	Write the importance of secure hash function with relevant examples? Differentiate between direct digital signature and arbitrated digital signature?	5	CO4
5.	Discuss Kerberos v4 and Kerberos v5?	6	CO4
6	Determine how X.509 certificate is revoked?	5	CO4
7.	Describe briefly what are the different kinds of the authentication requirements are there for message authentication?	6	CO4
8.	Describe why Kerberos is more secure than the other security mechanisms? .**(R16-MAR21 & R16-OCT20)**	6	CO
9.	Describe the message digest function in digital signatures and explain with an example?	6	CO4
10.	Write in detail about Digital Signature?	2	CO4

Unit-IV: Transport Level Security			
1 MARK QUESTIONS			
1.	Define SSL?	1	CO5
2.	Define TLS?	1	CO5
3.	Write about web security considerations?	1	CO5
4.	Define HTTPS?	1	CO5
5.	Define SSH?	1	CO5
6.	Write about mobile device security?	1	CO5
7	Write 4 properties of HTTP?	2	CO5
8.	Define IEEE802.11?	1	CO5
9.	Write about wireless LAN?	1	CO5
10.	Where we use wireless LAN?	2	CO5

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R18)** **Department of COMPUTER SCIENCE AND ENGINEERING**	**Prepared on Rev1:** **Page: 5of 6**

Sub. Code & Title	**(R18INF4295) INFORMATION SECURITY FUNDAMENTALS**		
Academic Year: 2022-23		**Year/Sem./Section**	**IV-I A,B,C,D**
Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :** Mrs K.Vijayalakshmi **,** Mr.B.Suresh		

5 MARKS QUESTIONS			
1.	Explain about web security considerations?	2	CO5
2.	What is secure socket layer ,briefly explain about it?	2	CO5
3.	Write down differences between SSL and TLS?	6	CO5
4.	Explain about transport layer security?	2	CO5
5.	Explain about IEEE802.11 with neat diagram?	2	CO5
6.	Write about HTTPS detail?	6	CO5
7.	Explain about secure shell?	5	CO5
8.	Write ashort notes on wireless LAN	1	CO5
9.	Explain about IEEE802.1i?	2	CO5
10.	Write about web security requirements?	1	CO5

Unit-V E-MAIL SECURITY			
1 MARK QUESTIONS			
1.	What is Email Security?	1	CO6
2.	What is cookie?	1	CO6
3.	What are authentication and confidentiality**?**	1	CO6
4.	What is tunnel mode?	1	CO6
5.	What are benfits of IPsec?	1	CO6
6.	List out notations used in PGP?	1	CO6
7.	Explain about Email compatibility?	1	CO6
8.	List MIME content Type?	1	CO6
9.	Define Authentication Header?	2	CO6
10.	Explain encapsulating Security Payload?	4	CO6

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R18)** **Department of COMPUTER SCIENCE AND ENGINEERING**	**Prepared on Rev1:** **Page: 5of 6**

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5 MARKS QUESTIONS			
1.	Write clearly about public key management in PGP?	2	CO5
2.	Describe how Authentication and Confidentiality are handled in S/MIME?	2	CO5
3.	Draw a neat diagram and write about IP Security Architecture? **(R16-DEC 19)**	2	CO5
4	Write about Authentication header?	1	CO5
5.	Write briefly about Encapsulating security payload format? **(R16-DEC 19)**	2	CO5
6	Enumerate all services of PGP and explain with neat sketch. **(R16-MAR21 & R16-OCT20)**	6	CO5
7	Justify why S/MIME is a security enhancement to MIME internet email format standard?	5	CO5
8	Describe how encapsulating security payload is defined?	1	CO5
9	Describe and explain how the security will be provided in Email?	2	CO5
10	Define payload? And discuss about encapsulating security payload?	1	CO5

QUESTION PAPERS

BR-18

Write Your Ht.No. | | D4 QC17

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi) - Recognized under 2(f) and 12(B) of UGC Act 1956

IV B.Tech. II Semester (REGULAR and SUPPL.) End Examinations, June – 2023.

(R18INF4295) INFORMATION SECURITY FUNDAMENTALS

05/06/2023 **(For CSE and IT)** **Day- 3 (FN)**

Duration: 3 Hrs **Maximum Marks: 70M**

Blooms Taxonomy : (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating and VI-Creating)
Course Outcomes : CO

PART – A

Answer all the following questions. **(5Qx 4M = 20M)**

1.	Define information security and describe its key concepts.	II	CO1
2.	What is symmetric key cryptography? Discuss its advantages.	VI	CO2
3.	What is Web security and why is it important?	I	CO3
4.	What is Malware? How to Stay Protected from Malware Attacks?	III	CO4
5.	Justify the impact of Law and Ethics in Information Security.	V	CO5

PART – B

Answer FIVE questions choosing at least one from each unit **(5Qx10M =50M)**

UNIT-I

6.	a) Enumerate the types of attacks.	II	CO1
	b) Explain the need and principles of security.	I	CO1
	OR		
7.	Describe the critical characteristics of information. How are they used in the study of computer security?	II	CO1

UNIT-II

8.	With a neat diagram explain how encryption and decryption are done using Blowfish algorithm?	III	CO2
	OR		
9.	a) Compare and contrast linear and differential cryptanalysis.	VI	CO2
	b) Describe block cipher modes of operation.	II	CO2

UNIT-III

10.	a) Explain the model for Network Security.	I	CO3
	b) Compare and contrast Kerberos version 4 and 5.	VI	CO3
	OR		
11.	Give the general structure of IP security authentication header. Describe how anti-replay service is supported?	III	CO3

UNIT-IV

12.	What is a firewall? List the characteristics of a good firewall implementation. How is circuit gateway different from application gateway?	IV	CO4
	OR		
13.	What is Intrusion? What are the measures used for intrusion detection? Discuss Intrusion detection system with neat diagram.	II	CO4

UNIT-V

14.	Interpret the importance of Legal, Ethical and Professional issues during the security investigation.	IV	CO5
	OR		
15.	What are the steps do we need to know in implementing the information security program? Explain the approaches to implementing information security.	II	CO5

*****

BR-18 SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY D4

IV B.Tech - II Semester - I Mid Term Examination, March – 2023

(R18INF4295) INFORMATION SECURITY FUNDAMENTALS

(For CSE & IT)

Duration: 90 Mins **Dt: 27-03-2023, Day-3 (AN)** **Max Marks: 25M**

Section – A

Answer *All* the questions **Marks: 5Qx1M = 5M**

* (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.)

		*Blooms Taxonomy Levels	Course Outcomes
1.	What are the characteristics of Information Security?	I	CO1
2.	Explain the types of security attacks.	II	CO2
3.	Define Cryptography.	I	CO3
4.	Explain about communication security.	II	CO3
5.	What is Email Security?	I	CO4

Section – B

Answer any *FOUR* questions **Marks: 4Qx5M = 20M**

6.	Write in detail about security attacks, services, mechanisms.	II	CO2
7.	Explain about Computer System Security.	II	CO2
8.	a) Write about substitution techniques.	II	CO3
	b) Write about transposition techniques.	II	CO3
9.	Construct AES encryption and decryption process with neat sketch.	III	CO3
10.	Explain briefly how diffusion and confusion increases complexity to the art the Cryptanalyst.	II	CO3
11.	What is X.509 authentication service?	I	CO4

BR-18 SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY D4

IV B.Tech - II Semester - II Mid Term Examination, May – 2023

(R18INF4295) INFORMATION SECURITY FUNDAMENTALS

(For CSE & IT)

Duration: 90 Mins **Dt: 23-05-2023, Day-2 (FN)** **Max Marks: 25M**

Section – A

Answer *All* the questions **Marks: 5Qx1M = 5M**

* (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.)

		*Blooms Taxonomy Levels	Course Outcomes
1.	What is VPN?	II	CO4
2.	Explain about Honey pots.	V	CO5
3.	Explain about the types of virus.	II	CO5
4.	Explain about policy. How does it differ from a law?	V	CO3
5.	What is the difference between law and ethics?	I	CO3

Section – B

Answer any *FOUR* questions **Marks: 4Qx5M = 20M**

6.	Determine how X.509 certificate is revoked.	V	CO4
7.	Describe why Kerberos is more secure than the other security mechanisms.	VI	CO4
8.	How does Scanning Works?	I	CO5
9.	How to prevent attackers to stealing our information?	I	CO5
10.	What are the three general categories of unethical and illegal behavior?	I	CO3
11.	Justify why S/MIME is a security enhancement to MIME internet email format Standard.	V	CO3

ASSIGNMENT QUESTIONS

SRI INDU COLLEGE OF ENGG & TECH

Department of COMPUTER SCIENCE AND ENGINEERING

INFORMATION SECURITY FUNDAMENTALS

ASSIGNMENT QUESTION

1. What are the types of security attacks?
2. Simplify model for Network Security?
3. Distinguish between symmetric key and asymmetric key cryptography
4. Classify the following plain text P=”TRUST MEE” into cipher text by Caesar cipher with key k= 4.
5. What are applications of public key cryptography?
6. Simplify the design criteria of block cipher?
7. Show AES encryption and decryption process with neat sketch?
8. Discuss HMAC and CMAC?
9. Explain the rules of public and private key?
10. Define Message Authentication code?
11. Write the importance of secure hash function with relevant examples?
12. Differentiate between direct digital signature and arbitrated digital signature?
13. Describe briefly what are the different kinds of the authentication requirements are there for message authentication?
14. Write about web security considerations?

15.Define IEEE802.11?

16.Where we use wireless LAN?

17.What is secure socket layer, briefly explain about it?

18. What are authentication and confidentiality**?**

Sri Indu
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NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

HANDOUT

Fourth Year CSE- Semester II

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2022-23

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

HANDOUT- INDEX

SRI INDU COLLEGE OF ENGINEERING &TECHNOLOGY
B. TECH COMPUTER SCIENCE AND ENGINEERING

INSTITUTION VISION

To be a premier institution in engineering & technology and management with competence, 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 economic and technological development of the region, state and nation.

DEPARTMENT VISION

To be a technologically adaptive centre for computing by grooming the students as top notch professionals

DEPARTMENT MISSION

DM1: To offer quality education in computing.

DM2: To provide an environment that enables overall development of all the stakeholders.

DM3: To impart training on emerging technologies like Data Analytics, Artificial Intelligence and Internet Of Things.

DM4: To encourage participation of stakeholders in research and development.

PROGRAM EDUCATIONAL OBJECTIVES(PEO's)

PEO 1: Graduates with strong foundation in mathematical and core concepts, which enable them to participate in research, in the field of Computer Science.

PEO 2: Graduates with application development, problem solving skills by learning the computer programming methods of the industry and related domains.

PEO 3: Graduates with multidisciplinary knowledge by understanding the scope of association of computer science engineering along with other engineering disciplines.

PEO 4: Graduates with communication skills, soft skills, organizing skills which build the professional qualities, understand the social responsibilities and ethical attitude.

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

PO	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 modeling 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 and1`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	
PSO 1	**Software Development:** To apply the knowledge of Software Engineering, Data Communication, Web Technology and Operating Systems for building IOT and Cloud Computing applications.
PSO 2	**Industrial Skills Ability:** Design, develop and test software systems for world-wide network of computers to provide solutions to real world problems.
PSO 3	**Project implementation:** Analyze and recommend the appropriate IT Infrastructure required for the implementation of a project.

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTCOMES (CO's)

COURSE NAME: INFORMATION SECURITY FUNDAMENTALS (R18INF4295)

Course Outcomes (COs)	
C423.1	Understand the Information security and various Attacks. Analyze the effectiveness of passwords in access control.
C423.2	Understand the basic concepts of Cryptography, encryption and decryption techniques of various communication channels.
C423.3	Understand the Various network security applications, IPSec, Web security, Email security, and Kerberos, X.509 etc.
C423.4	Apply firewall principles, honey pots, IDS,IPS, authentication, mechanisms.
C423.5	Analyze diverse viewpoints to ethical dilemmas in the information technology field and recommend appropriate actions.
C423.6	Understand the role of third-party agents in the provision of authenticationservices

SRI INDU COLLEGE OF ENGINEERING ANDTECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Mapping of Course Outcomes(CO's) with PO's / PSO's:

Course Articulation Matrix

COURSE NAME: (R18INF4295) Information Security Fundamentals

CO	PO											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C423.1	3	2	-	-	-	-	-	-	-	-	-	-
C423.2	3	3	3	-	-	-	-	-	-	-	-	-
C423.3	2	3	3	3	-	-	-	-	-	-	-	-
C423.4	2	3	2	2	-	-	-	-	-	-	-	-
C423.5	2	3	3	2	-	-	-	-	-	-	-	-
C423.6	2	2	3	3	-	-	-	-	-	-	-	-
C423	**2.33**	**2.67**	**2.8**	**2.5**	-	-	-	-	-	-	-	-

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CO-PO/PSO MAPPING

C423.1	Master Able to Understand the need of Security

Mapped POs: PO1, PO2

PO1	Student gains knowledge on cryptography and network security
PO2	Student identifies the advantages of cryptographyand network security

C423.2	Master understanding of symmetric and asymmetric encryption systems, various attacks

Mapped POs: PO1, PO2, PO3

PO1	Student gains knowledge about information security Implementation.
PO2	Student analyses the problems related how an application communicates with hardware.
PO3	Student will be able to overcome the problems of security attacks Implementation.

C423.3	Master the role of third-party agents in the provision of authentication services.

Mapped POs: PO1, PO2, PO3, PO4

PO1	Student gains knowledge about the agents, third party criteria
PO2	Analyses problems related to security .
PO3	Student compares various attacks and authentication services
PO4	Designs different problems of security attacks and authentication services

C423.4	Comprehend and apply authentication, email security, web security services and mechanisms.

Mapped POs: PO1, PO2, PO3,PO4

PO1	Student gains knowledge about different securities
PO2	Analyses different services and mechanisms
PO3	Overcomes security attack problems
PO4	Design different email and web securities

C423.5	Master different protocol like SSL, TLS Vis-à-vis their applications

Mapped POs: PO1, PO2, PO3, PO4

PO1	Student gains knowledge about different protocols
PO2	Analyses SSL,TSL applications
PO3	Compares various protocols
PO4	Students are able to Implement different protocols

C423.6	Master the effectiveness of passwords in access control, security services and mechanisms.

Mapped POs: PO1, PO2, PO3, PO4

PO1	Student gains knowledge about effectiveness of passwords
PO2	Student Analyses the problems related to passwords
PO3	Student designs the different passwords and mechanisms
PO4	Provides protection by using security services

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)

Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 403

Class: IV CSE-A (II SEM) **Time - Table**

w.e.f:20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	DS	ISF	OB	L U N C H	ISF	OB	DS
Tuesday	OB	DS	ISF		OB	DS	ISF
Wednesday	ISF	OB	DS		DS	ISF	OB
Thursday	---------- Project Work--------				------ Project Work-----		
Friday	----------Project Work-------				------Project Work----		
Saturday	---------- Project Work--------				--- Project Work----		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mr.M.Sathyam
DS	Distributed Systems	Mr. S.Sathvik Prasad
ISF	Information Security Fundamentals	Dr. K.S.Sadhasiva Rao
PW	Project Work	Mr. S.Sathvik Prasad

Class Co-Ordinator **DEAN** **HOD**

Mr. S.Sathvik Prasad

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)

Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 402

Class: IV CSE-B (II SEM) **Time - Table**

w.e.f: 20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	ISF	OB	DS	L U N C H	OB	DS	ISF
Tuesday	DS	ISF	OB		DS	ISF	OB
Wednesday	OB	DS	ISF		ISF	OB	DS
Thursday	---------- Project Work----				---------- Project Work--		
Friday	----------Project Work----				----------Project Work--		
Saturday	---------- Project Work----				---------- Project Work--		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mrs.T.Madhavi
DS	Distributed Systems	Mr. S.Sathvik Prasad
ISF	Information Security Fundamentals	Mrs.K.Vijayalakshmi
PW	Project Work	Mr. S.Sathvik Prasad

Class Co-Ordinator **DEAN** **HOD**

Mr.S.Sathvik prasad

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)

Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 416

Class: IV CSE-C (II SEM) **Time - Table**

w.e.f: 20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	OB	DS	ISF	L U N C H	DS	ISF	OB
Tuesday	ISF	OB	DS		ISF	OB	DS
Wednesday	DS	ISF	OB		OB	DS	ISF
Thursday	----- Project Work-----				---- Project Work----		
Friday	-----Project Work-----				-----Project Work----		
Saturday	---- Project Work----				--- Project Work----		

SUBJECT CODE	SUBJECT NAME	FACULTY NAME
OB	Organizational Behavior	Mrs.I.Mahalakshmi
DS	Distributed Systems	Dr. T. Charansingh
ISF	Information Security Fundamentals	Mr.B.Suresh
PW	Project Work	Ms.G.Swarnalatha

Class Co-Ordinator **DEAN** **HOD**

Mr.B.Suresh

Sri Indu College of Engineering &Technology

(An Autonomous Institution under UGC)

Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy (Dist) – 501 510

Department of Computer Science & Engineering

ROOM NO: 417

Class: IV CSE-D (II SEM) **Time - Table**

w.e.f: 20.08.2022

Time	**9:40 – 10:40**	**10:40 – 11:40**	**11:40 – 12:40**	**12:40 To 1:20**	**1:20 – 2:15**	**2:15 – 3:10**	**3:10 – 4:00**
Days	1	2	3		4	5	6
Monday	DS	ISF	OB	L U N C H	ISF	OB	DS
Tuesday	OB	DS	ISF		OB	DS	ISF
Wednesday	ISF	OB	DS		DS	ISF	OB
Thursday	---- Project Work--				---- Project Work-----		
Friday	----Project Work----				---Project Work-----		
Saturday	----- Project Work-----				---- Project Work----		

SUBJECT CODE	**SUBJECT NAME**	**FACULTY NAME**
OB	Organizational Behavior	Mr.Jaya Krishna
DS	Distributed Systems	Dr. T. Charansingh
ISF	Information Security Fundamentals	Mr.B.Suresh
PW	Project Work	Ms.G.Swarnalatha

Class Co-Ordinator **DEAN** **HOD**

Mr.B.Suresh

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution under UGC, New Delhi)
Recognized under 2(f) and 12(B) of UGC Act 1956
NBA & NAAC Accredited, Approved by AICTE and Permanently affiliated to JNTUH
Sheriguda (V), Ibrahimpatnam, R.R.Dist, Hyderabad - 501 510

D4

BR-18

Lr.No.SICET/AUTO/DAE/IV B.Tech Academic Calendar/306/2022 Dt: 01.08.2022

Dr.G. SURESH,
Principal,

To,
All the HODs.

IV B.TECH I SEM & II SEM ACADEMIC CALENDAR
ACADEMIC YEAR : 2022-23

Sir,

Sub: SICET (Autonomous) - Academic & Evaluation - Academic Calendar for **B.Tech – 4th Year** - For the academic year **2022-23** – Reg.

***

The approved Academic Calendar for **B.Tech – 4th Year (I & II Sem)** for the academic year **2022-23** is given below:

Academic Calendar for B.Tech – 4th Year Students
(2019 - 20 Batch), BR-18 Regulation.

I - Semester

Commencement of I Semester class work	**25.08.2022 (Thursday)**	
I Spell of Instructions (Including Dussehra Holidays).	25.08.2022	26.10.2022 - 9 Weeks
Dussehra Holidays.	03.10.2022	08.10.2022 - 1 Week
I Mid Term Examinations for IV B.Tech I Sem Students.	27.10.2022	29.10.2022 - 3 Days
II Spell of Instructions.	31.10.2022	24.12.2022 - 8 Weeks
II Mid Term Examinations for IV B.Tech I Sem Students.	27.12.2022	29.12.2022 - 3 Days
Preparation Holidays, Practical Examinations and Remedial Mid Test (RMT).	30.12.2022	07.01.2023 - 9 Days
IV B.Tech I Semester End Examinations (Main) and Supplementary Examinations.	09.01.2023	25.01.2023 - 2 Weeks 3 Days
Sankranti Holidays.	13.01.2022	16.01.2022 - 4 Days
Commencement of class work of IV B.Tech II Semester - 27.01.2023 (Friday)		

II - Semester

Commencement of II Semester class work	**27.01.2023 (Friday)**	
I Spell of Instructions.	27.01.2023	23.03.2023 - 8 Weeks
I Mid Examinations for IV B.Tech II Sem Students.	24.03.2023	25.03.2023 - 2 Days
II Spell of Instructions.	27.03.2023	20.05.2023 - 8 Weeks
II Mid Examinations for IV B.Tech II Sem Students.	22.05.2023	23.05.2023 - 2 Days
Preparation Holidays, Project Evaluation and Remedial Mid Test (RMT).	24.05.2023	31.05.2023 - 8 Days
IV B.Tech II Semester End Examinations (Main) and Supplementary Examinations.	01.06.2023	07.06.2023 - 1 Week

ACE CE DIRECTOR PRINCIPAL

Copy to DAE,
Copy to all the Heads of the Depts.

CONTROLLER OF EXAMINATIONS
Sri Indu College of Engineering & Technology
(An Autonomous Institution under JNTUH)
Sheriguda (V), Ibrahimpatnam, R.R. Dist-501510.

DIRECTOR
(Academic Audit)
Sri Indu College of Engineering & Technology
Sheriguda, IBP, R.R. Dist-501510.

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

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

Academic CALENDAR – 2022-2023 (SEMESTER-1)

DAYS	SEPTEMBER'22	OCTOBER '22	NOVEMBER '22	DECEMBER '22	JANUARY'23	FEBRUARY'23
SUNDAY						
MONDAY			1			
TUESDAY			2			1
WEDNESDAY			3			2
THURSDAY			4			3
FRIDAY		1 Bathukamma Celebrations	5			4
SATURDAY		2 Gandhi Jayanti/ HOLIDAY	6 HOLIDAY	HOLIDAY	NEW YEAR/ HOLIDAY	5 HOLIDAY
SUNDAY	HOLIDAY	3 DASARA HOLIDAYS	7		PRACTICAL EXAM	6
MONDAY		4 DASARA HOLIDAYS	8 GURUNANAK JAYANTHI		PRACTICAL EXAM	7
TUESDAY		5 DASARA HOLIDAYS	9		PRACTICAL EXAM	8
WEDNESDAY		6 DASARA HOLIDAYS	10		PRACTICAL EXAM	9
THURSDAY		7 DASARA HOLIDAYS	11		PRACTICAL EXAM	10
FRIDAY	Ganesh Nimajanam	8 DASARA HOLIDAYS	12		PRACTICAL EXAM	11
SATURDAY		9 HOLIDAY	13 HOLIDAY	HOLIDAY	H OLIDAY	12 HOLIDAY
SUNDAY	HOLIDAY	10	14		END EXAMINATION	13
MONDAY	Commencement of Classes (III, IV Yr)	11	15		END EXAMINATION	14
TUESDAY	IV-YEAR CRT TRAINING	12	16		END EXAMINATION	15
WEDNESDAY	IV-YEAR CRT TRAINING	13	17		END EXAMINATION	16
THURSDAY	IV-YEAR CRT TRAINING	14	18		BHOGI	17

FRIDAY		IV-YEAR CRT TRAINING	15		19					SANKRANTHI	18			
SATURDAY		Telangana vimochana dinostavam	16	HOLIDAY	20	HOLIDAY		HOLIDAY		HOLIDAY	19	HOLIDAY		

SRIINDUCOLLEGEOFENGINEERING &TECHNOLOGY

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B. Tech.-IV Year– II Semester	OPENELECTIVE- III	L	T	P	C
		3	0	0	3

(R18INF4295) Information Security Fundamentals

COURSEOBJECTIVES:

1. ToprovideimpeccableknowledgeonvarioustechnicalaspectsofInformationSecurity&ComputerSecurityprinciples
2. To provide foundation for understanding the key issues associated with protecting Computer Systems & Information Assets.
3. To provide competency in designing consistent & reasonable Information security system with appropriate Scanning &Enumeration mechanisms, determining the level of protection and Response to security incidents.

UNITI: Introduction to Information Security- Introduction to Information Security, Need for Security - Threats to security & Attacks, Computer System Security and Access Controls – System access and data access.

UNIT II: Communication Security-Introduction to cryptography, cryptosystems, encryption and decryption techniques, classical encryption techniques, communication channel used in cryptographic system, various types of ciphers, cryptanalysis, hash function and data integrity, security of hashing function.

UNIT III: Network - Introduction to Network Security, Email Security, IP Security, Web Security, Kerberos, X.509techniques.

UNITIV:Scanning&EnumerationTechnology-Malicioussoftware,Firewalls,Honeypots,Intrusion Detection system, Intrusion Prevention system

UNIT V: Ethics In Information Security - Implementing Information Security, Legal Ethical & Professional issues in Information Security, Contemporary Topics.

TEXTBOOKS:

1. MattBishop,"ComputerSecurity:ArtandScience",Addison-WesleyProfessional,FirstEdition,2003.ISBN:0201440997.
2. William Stallings, "Cryptography and Network Security", Pearson Education, Fourth Edition,2006.ISBN:8177587749

REFERENCES:

1. MichaelE.Whitman,HerbertJ.Mattord,"PrinciplesofInformationSecurity"CengageLearning,FourthEdition,2010,ISBN:1111138214
2. Charlie Kaufman, Radia Perlman, Mike Speciner, "Network security: private communication in a publicworld",SecondEdition,ISBN:0130460192.
3. Dieter Gollmann, "Computer Security", Third Edition,ISBN:0470741155.

	SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY **LESSON PLAN** **(Regulation :R18)** **Department of Computer Science and Engineering**	**Page: 17 -3**
	Sub. Code & Title	**R18INF4295 INFORMATION SECURITY FUNDAMENTALS**
	Academic Year: 2022-23	**Year/Sem./Section** **II/I/ A,B,C,D**
	Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :** Mrs K.Vijayalakshmi , Mr.B.Suresh

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-I							
1	**INTRODUCTION - INFORMATION SECURITY**					**10**		
1.1	Introduction to Information Security	T1	1	2	Black board	01		CO1,L2
1.2	Need for Security	T1	3	8	Black board	02		CO1,L6
1.3	Threats to security & Attacks	T1	11,102	14,105	Black board	02		CO1,L1
1.4	Computer System Security	T1	14	18	Black board	01		CO1,L2
1.5	Access Controls	T1	136	140	Black board	02		CO1,L2
1.6	System access and Data access	T1			Black board	02		CO1,L1
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	**Topic (s)**	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-II							
2	**COMMUNICATION SECURITY**					**14**		
2.1	Introduction to cryptograph.	T1	288	295	Black board	01		CO2,L1
2.2	Cryptosystems	T1	288	289	Black board	01		CO2,L2
2.3	Encryption & Decryption Techniques	T1	289	290	Black board	02		CO2,L1
2.4	Classical Encryption Techniques	T1			Black board	02		CO2,L2
2.5	Communication channel used in Cryptographic System,	T1	407	408	Black board	02		CO2,L1
2.6	Various types of ciphers	T1	299	305	Black board	02		CO2,L2

2.7	Cryptanalysis	T1	305	306	Black board	01		CO2,L3
2.8	Hash function and Data integrity	T1	311, 378	312, 379	Black board	02		CO2,L4
2.9	Security of Hashing function	T1			Black board	01		CO2,L1
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	**Topic (s)**	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-III							
3	**NETWORK**					**08**		
3.1	Introduction to Network Security	T1	299,322	300,323	Black board	02		CO3,L2
3.2	Email Security	T1			Black board	01		CO3,L3
3.3	IP Security	T3	661	662	Black board	01		CO3,L1
3.4	Web Security	T2	441	443	Black board	01		CO3,L1
3.5	Kerberos	T1,T2	152,324	153, 340	Black board	01		CO3,L3
3.6	X.509 techniques	T1	341	349	Black board	02		CO3,L3
	Review	**Signature of the HOD/Coordinator**						

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
			From	To				
	UNIT-IV							
4	**SCANNING & ENUMERATION TECHNOLOGY**					**08**		
4.1	Mallicious Software	T1	99, 355	99, 355	Black board	02		CO4,L2
4.2	Firewalls	T1	108,341	108,344	Black board	01		CO4,L1
4.3	Honey Pots	T1	392	392	Black board	01		CO4,L2
4.4	Intrusion Detection System	T1	234	238	Black board	02		CO4,L1
4.5	Intrusion Prevention System	T1	241	266	Black board	02		CO4,L6
	Review	**Signature of the HOD/Coordinator**						

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							
5	ETHICS IN INFORMATION SECURITY					**10**		
5.1	Implementing Information Security	T1	456	456	Black board	02		CO5,L2
5.2	Legal Ethical & Professional Issues in Information Security	T1	452	487	Black Board	04		CO5,L2
5.3	Contemporary Topics	T1	433	445	Black board	04		CO5,L1
	Review	**Signature of the HOD/Coordinator**						

TEXT BOOKS:

T1. Fundamentals of Information Systems Security:David Kim, Michael G.Solomon, 3rd Edition
T2. Cryptography and Network Security: William Stallings, Pearson Education, 4th Edition
T3.Cryptography and Network Security: William Stallings, Pearson Education, 7th Edition
T4. Cryptography and Network Security: Atul kahate, Mc Graw Hill, 3rdEdition
T5. Cryptography and Network Security: William Stallings, Pearson Education, 2nd Edition

REFERENCE BOOKS:

R1. Cryptography and Network Security: C K Shyamala, N Harini, Dr. T R Padmanabhan, Wiley India, 1st Edition

R2.Criptography and network Security, Forouzn Mukhopadhyay ,McGraw Hill,2nd edition

R3.Information Security, Principles and Practice: Mark Stamp, Wiley India

R4.Principles of Computer Security: VM Arthur Conklin, Greg White, TMH

R5.Introduction to Network Security: Neal Krawetz, CENGAGE Learning.

R6.Network Security and Cryptography: Bernard Menezes, CENGAGE Learning.

Web Links:

W1:https://nptel.ac.in/courses/106105031/39

W2:http://www.cs.wm.edu/~hnw/courses/cs454/notes/lecture17_email.pdf

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R18)** **Department of COMPUTER SCIENCE AND ENGINEERING**	**Prepared on Rev1:** **Page:** 1**of 6**

Sub. Code & Title	**(R18INF4295) INFORMATION SECURITY FUNDAMENTALS**		
Academic Year: 2022-23		**Year/Sem./Section**	**IV-I A,B,C,D**
Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :** Mrs K.Vijayalakshmi , Mr.B.Suresh		

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 6. Creating)

UNIT-1: Introduction to Information Security			
1 MARKSQUESTIONS		**BT Level**	**Course Outcome**
1.	What are the types of security attacks? **(R16-DEC 19)**	1	CO1
2.	Define plaintext and cipher text?	1	CO1
3.	Define Cryptography?	1	CO1
4.	Define encryption and decryption.	1	CO1
5.	Define Information Security?	1	CO1
6.	What is meant by authentication and availability?	1	CO1
7.	List briefly categories of security mechanisms?	1	CO1
8.	Simplify model for Network Security?	4	CO1
9.	Distinguish symmetric and asymmetric key cryptography?	4	CO2
10.	Define steganography?	1	CO2
11.	Define cryptanalysis?	1	CO1

5 MARKS QUESTIONS			
1.	Write in detail about security attacks, services, mechanisms?	2	CO1
2.	With a neat diagram write about a model for Network security.**(R16-MAR21 & R16-OCT20 & R16-DEC19)**	2	CO1
3.	Write the types of security attacks withexample?	1	CO2
4.	Distinguish between symmetric key and asymmetric key cryptography.	4	CO2
5.	a. Write about substitutiontechniques. b. Write about transpositiontechniques.	2	CO2

6.	Define Caesar cipher? And calculate the encryption and decryption for the following plain text P=”COME TO MY HOME” by using caser cipher with Key k=3?	1	CO1
7.	Construct all kinds of cipher techniques in the cryptography?	4	CO1
8.	Classify the following plain text message P=”come to my home today using Row Transposition.	4	CO2
9.	Classify the following plain text P=”TRUST MEE” into cipher text by Caesar cipher with key k= 4.	4	CO2
10.	Classify the following plain text message P=0110111 into cipher text by using one-time pad cipher with key K=1011001.calculate both encryption and decryption for the above message.	4	CO2

Unit -II : COMMUNICATION SECURITY			
1 MARK QUESTIONS			
1.	What are the components of conventional encryption principles?	1	CO3
2.	What are the Conventional encryption algorithms?	1	CO3
3.	What are public key cryptosystems algorithms?	1	CO3
4.	What are applications of public key cryptography?	1	CO3
5.	Define product cipher?	1	CO3
6.	Explain RC4 Location?	2	CO3
7.	Determine session key and master key?	5	CO3
8	Determine link and end-to-end encryption?	5	CO3
9.	Simplify the design criteria of block cipher?	4	CO3
10.	Explain advantages of counter mode?	2	CO3

5 MARKS QUESTIONS			
1	Discuss Feistel's cipher structure with a neat diagram?	6	CO3
2.	Write in detail about simple-DES and AES.	2	CO3
3.	Write about the various key distribution methods?	2	CO3
4.	Prove encryption and decryption using RSA algorithm for a)p=3,q=11,e=7,m=5 b)p=11,q=13,e=11,m=7. **(R16-MAR21 & R16-OCT20)**	5	CO3
5.	Discuss ate RSA and Diffie Hellman algorithm.	6	CO3
6.	Show AES encryption and decryption process with neat sketch?	2	CO3
7.	Explain briefly about RSA algorithm and IDEAin a detail manner?	2	CO3
8	Explain about Blowfish Algorithm with example	2	CO3
9	Explain briefly how diffusion and confusion increases complexity to thwart the cryptanalyst?	2	CO3
10	Explain all the principles of the public key crypto systems? **(R14-NOV/DEC 17)**	2	CO3

Unit – III : NETWORK			
1 MARK QUESTIONS			
1.	Define digital signature?	1	CO4
2.	What are advantages and disadvantages of Kerberos?	1	CO4
3	What is Hash function?	1	CO4
4.	Define Message Authentication code?	1	CO4
5	What are the parameters of HMAC algorithms?	1	CO4
6.	Discuss HMAC and CMAC?	6	CO4
7	Extend key principles of Biometric Authentication?.	2	CO4
8.	Enumerate uses of public key cryptography?	1	CO4
9.	Explain the rules of public and private key?	2	CO4
10.	Define digital signatures?	1	CO4

5 MARKS QUESTIONS			
1.	Write in detail about Digital signature? **(R16-DEC 19 & R14 NOV/DEC 17)**	2	CO4
2	What is X.509 authentication service? **(R16-DEC 19)**	1	CO4
3.	Write short notes on message authentication code?	2	CO4
4	Write the importance of secure hash function with relevant examples? Differentiate between direct digital signature and arbitrated digital signature?	5	CO4
5.	Discuss Kerberos v4 and Kerberos v5?	6	CO4
6	Determine how X.509 certificate is revoked?	5	CO4
7.	Describe briefly what are the different kinds of the authentication requirements are there for message authentication?	6	CO4
8.	Describe why Kerberos is more secure than the other security mechanisms? .**(R16-MAR21 & R16-OCT20)**	6	CO
9.	Describe the message digest function in digital signatures and explain with an example?	6	CO4
10.	Write in detail about Digital Signature?	2	CO4

Unit-IV: Transport Level Security			
1 MARK QUESTIONS			
1.	Define SSL?	1	CO5
2.	Define TLS?	1	CO5
3.	Write about web security considerations?	1	CO5
4.	Define HTTPS?	1	CO5
5.	Define SSH?	1	CO5
6.	Write about mobile device security?	1	CO5
7	Write 4 properties of HTTP?	2	CO5
8.	Define IEEE802.11?	1	CO5
9.	Write about wireless LAN?	1	CO5
10.	Where we use wireless LAN?	2	CO5

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R18)** **Department of COMPUTER SCIENCE AND ENGINEERING**	**Prepared on Rev1:** **Page: 5of 6**

Sub. Code & Title	**(R18INF4295) INFORMATION SECURITY FUNDAMENTALS**		
Academic Year: 2022-23		**Year/Sem./Section**	**IV-I A,B,C,D**
Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :** Mrs K.Vijayalakshmi **,** Mr.B.Suresh		

5 MARKS QUESTIONS			
1.	Explain about web security considerations?	2	CO5
2.	What is secure socket layer ,briefly explain about it?	2	CO5
3.	Write down differences between SSL and TLS?	6	CO5
4.	Explain about transport layer security?	2	CO5
5.	Explain about IEEE802.11 with neat diagram?	2	CO5
6.	Write about HTTPS detail?	6	CO5
7.	Explain about secure shell?	5	CO5
8.	Write ashort notes on wireless LAN	1	CO5
9.	Explain about IEEE802.1i?	2	CO5
10.	Write about web security requirements?	1	CO5

Unit-V E-MAIL SECURITY			
1 MARK QUESTIONS			
1.	What is Email Security?	1	CO6
2.	What is cookie?	1	CO6
3.	What are authentication and confidentiality**?**	1	CO6
4.	What is tunnel mode?	1	CO6
5.	What are benfits of IPsec?	1	CO6
6.	List out notations used in PGP?	1	CO6
7.	Explain about Email compatibility?	1	CO6
8.	List MIME content Type?	1	CO6
9.	Define Authentication Header?	2	CO6
10.	Explain encapsulating Security Payload?	4	CO6

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R18)** **Department of COMPUTER SCIENCE AND ENGINEERING**	**Prepared on Rev1:** **Page: 5of 6**

Sub. Code & Title	**(R18INF4295) INFORMATION SECURITY FUNDAMENTALS**		
Academic Year: 2022-23		**Year/Sem./Section**	**IV-I A,B,C,D**
Faculty Name & Designation	**Associate Professor :** Dr. K.S.Sadhasiva Rao **Assistant Professor :**Mrs K.Vijayalakshmi , Mr.B.Suresh		

5 MARKS QUESTIONS			
1.	Write clearly about public key management in PGP?	2	CO5
2.	Describe how Authentication and Confidentiality are handled in S/MIME?	2	CO5
3.	Draw a neat diagram and write about IP Security Architecture? **(R16-DEC 19)**	2	CO5
4	Write about Authentication header?	1	CO5
5.	Write briefly about Encapsulating security payload format? **(R16-DEC 19)**	2	CO5
6	Enumerate all services of PGP and explain with neat sketch. **(R16-MAR21 & R16-OCT20)**	6	CO5
7	Justify why S/MIME is a security enhancement to MIME internet email format standard?	5	CO5
8	Describe how encapsulating security payload is defined?	1	CO5
9	Describe and explain how the security will be provided in Email?	2	CO5
10	Define payload? And discuss about encapsulating security payload?	1	CO5

QUESTION PAPERS

BR-18

Write Your Ht.No. | | D4 QC17

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi) - Recognized under 2(f) and 12(B) of UGC Act 1956

IV B.Tech. II Semester (REGULAR and SUPPL.) End Examinations, June – 2023.

(R18INF4295) INFORMATION SECURITY FUNDAMENTALS

05/06/2023 **(For CSE and IT)** **Day- 3 (FN)**

Duration: 3 Hrs **Maximum Marks: 70M**

Blooms Taxonomy : (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating and VI-Creating)
Course Outcomes : CO

PART – A

Answer all the following questions. **(5Qx 4M = 20M)**

1.	Define information security and describe its key concepts.	II	CO1
2.	What is symmetric key cryptography? Discuss its advantages.	VI	CO2
3.	What is Web security and why is it important?	I	CO3
4.	What is Malware? How to Stay Protected from Malware Attacks?	III	CO4
5.	Justify the impact of Law and Ethics in Information Security.	V	CO5

PART – B

Answer FIVE questions choosing at least one from each unit **(5Qx10M =50M)**

UNIT-I

6.	a) Enumerate the types of attacks.	II	CO1
	b) Explain the need and principles of security.	I	CO1
	OR		
7.	Describe the critical characteristics of information. How are they used in the study of computer security?	II	CO1

UNIT-II

8.	With a neat diagram explain how encryption and decryption are done using Blowfish algorithm?	III	CO2
	OR		
9.	a) Compare and contrast linear and differential cryptanalysis.	VI	CO2
	b) Describe block cipher modes of operation.	II	CO2

UNIT-III

10.	a) Explain the model for Network Security.	I	CO3
	b) Compare and contrast Kerberos version 4 and 5.	VI	CO3
	OR		
11.	Give the general structure of IP security authentication header. Describe how anti-replay service is supported?	III	CO3

UNIT-IV

12.	What is a firewall? List the characteristics of a good firewall implementation. How is circuit gateway different from application gateway?	IV	CO4
	OR		
13.	What is Intrusion? What are the measures used for intrusion detection? Discuss Intrusion detection system with neat diagram.	II	CO4

UNIT-V

14.	Interpret the importance of Legal, Ethical and Professional issues during the security investigation.	IV	CO5
	OR		
15.	What are the steps do we need to know in implementing the information security program? Explain the approaches to implementing information security.	II	CO5

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BR-18 SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY D4

IV B.Tech - II Semester - I Mid Term Examination, March – 2023

(R18INF4295) INFORMATION SECURITY FUNDAMENTALS

(For CSE & IT)

Duration: 90 Mins **Dt: 27-03-2023, Day-3 (AN)** **Max Marks: 25M**

Section – A

Answer *All* the questions **Marks: 5Qx1M = 5M**

* (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.)

		*Blooms Taxonomy Levels	Course Outcomes
1.	What are the characteristics of Information Security?	I	CO1
2.	Explain the types of security attacks.	II	CO2
3.	Define Cryptography.	I	CO3
4.	Explain about communication security.	II	CO3
5.	What is Email Security?	I	CO4

Section – B

Answer any *FOUR* questions **Marks: 4Qx5M = 20M**

6.	Write in detail about security attacks, services, mechanisms.	II	CO2
7.	Explain about Computer System Security.	II	CO2
8.	a) Write about substitution techniques.	II	CO3
	b) Write about transposition techniques.	II	CO3
9.	Construct AES encryption and decryption process with neat sketch.	III	CO3
10.	Explain briefly how diffusion and confusion increases complexity to the art the Cryptanalyst.	II	CO3
11.	What is X.509 authentication service?	I	CO4

BR-18 SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY D4

IV B.Tech - II Semester - II Mid Term Examination, May – 2023

(R18INF4295) INFORMATION SECURITY FUNDAMENTALS

(For CSE & IT)

Duration: 90 Mins **Dt: 23-05-2023, Day-2 (FN)** **Max Marks: 25M**

Section – A

Answer *All* the questions **Marks: 5Qx1M = 5M**

* (I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating, and VI-Creating.)

		*Blooms Taxonomy Levels	Course Outcomes
1.	What is VPN?	II	CO4
2.	Explain about Honey pots.	V	CO5
3.	Explain about the types of virus.	II	CO5
4.	Explain about policy. How does it differ from a law?	V	CO3
5.	What is the difference between law and ethics?	I	CO3

Section – B

Answer any *FOUR* questions **Marks: 4Qx5M = 20M**

6.	Determine how X.509 certificate is revoked.	V	CO4
7.	Describe why Kerberos is more secure than the other security mechanisms.	VI	CO4
8.	How does Scanning Works?	I	CO5
9.	How to prevent attackers to stealing our information?	I	CO5
10.	What are the three general categories of unethical and illegal behavior?	I	CO3
11.	Justify why S/MIME is a security enhancement to MIME internet email format Standard.	V	CO3

ASSIGNMENT QUESTIONS

SRI INDU COLLEGE OF ENGG & TECH

Department of COMPUTER SCIENCE AND ENGINEERING

INFORMATION SECURITY FUNDAMENTALS

ASSIGNMENT QUESTION

1. What are the types of security attacks?
2. Simplify model for Network Security?
3. Distinguish between symmetric key and asymmetric key cryptography
4. Classify the following plain text P=”TRUST MEE” into cipher text by Caesar cipher with key k= 4.
5. What are applications of public key cryptography?
6. Simplify the design criteria of block cipher?
7. Show AES encryption and decryption process with neat sketch?
8. Discuss HMAC and CMAC?
9. Explain the rules of public and private key?
10. Define Message Authentication code?
11. Write the importance of secure hash function with relevant examples?
12. Differentiate between direct digital signature and arbitrated digital signature?
13. Describe briefly what are the different kinds of the authentication requirements are there for message authentication?
14. Write about web security considerations?

15.Define IEEE802.11?

16.Where we use wireless LAN?

17.What is secure socket layer, briefly explain about it?

18. What are authentication and confidentiality**?**