



Estd:2001

Sri Indu

College of Engineering & Technology

UGC Autonomous Institution

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

NAAC, Approved by AICTE &

Permanently Affiliated to JNTUH



NAAC

NATIONAL ASSESSMENT AND
ACCREDITATION COUNCIL



HANDOUT

IV B.TECH CSE- Semester I

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2022-23

**DEPARTMENT OF COMPUTER SCIENCE
AND ENGINEERING**

HANDOUT- INDEX

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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 center 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 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	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.



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

Dt: 03.08.2022

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 class work	25.08.2022 (Thursday)	
Instruction / Class Work.	25.08.2022	14.12.2022 - 16 Weeks
Dussehra Holidays.	03.10.2022	06.10.2022 - 4 Days
I Mid Examinations for IV B.Tech I Sem Students.	20.10.2022	22.10.2022 - 3 Days
II Mid Examinations for IV B.Tech I Sem Students.	15.12.2022	17.12.2022 - 3 Days
Preparation Holidays & Practical Examinations.	19.12.2022	24.12.2022 - 1 Week
Remedial Mid Test (RMT).	27.12.2022	29.12.2022 - 3 Days
IV B.Tech I Semester End Examination.	30.12.2022	11.01.2023 - 2 Weeks
Commencement of class work of IV B.Tech II Semester - 16.01.2023 (Monday)		

II - Semester

Commencement of class work	16.01.2023 (Monday)	
Instruction / Class Work.	16.01.2023	06.05.2023 - 16 Weeks
I Mid Examinations for IV B.Tech II Sem Students.	13.03.2023	14.03.2023 - 2 Days
II Mid Examinations for IV B.Tech II Sem Students.	08.05.2023	09.05.2023 - 2 Days
Preparation Holidays & Project Evaluation	10.05.2023	15.05.2023 - 1 Week
Remedial Mid Test (RMT).	16.05.2023	17.05.2023 - 2 Days
IV B.Tech II Semester End Examination.	18.05.2023	24.05.2023 - 1 Week


ACE


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DIRECTOR


PRINCIPAL
PRINCIPAL

Copy to DAE,
Copy to all the Heads of the Departments
(An Autonomous Institution under JNTUH)
Sheriguda (V), Ibrahimpatnam, R.R.Dist.-501510.

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.



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT COMPUTER SCIENCE AND ENGINEERING

CO's MAPPING WITH PO's & PSO's

CRYPTOGRAPHY AND NETWORKSECURITY (R18CSE 4101)

At the end of the course, the student will be able to mapping of Course

Course Outcomes (COs)	
C411.1	Explain security concepts, Ethics in Network Security. Identify and classify various Attacks and explain the same.
C411.2	Compare and contrast symmetric and asymmetric encryption systems and their vulnerability to various attacks.
C411.3	Explain the role of third-party agents in the provision of authentication services.
C411.4	Comprehend and apply authentication, email security, web security services and mechanisms.
C411.5	Distinguish and explain different protocol like SSL, TLS Vis-à-vis their applications
C411.6	Discuss the effectiveness of passwords in access control. Explain firewall principles.

Course Articulation Matrix

CO	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C411.1	3	2	-	-	-	-	-	-	-	-	-	-	3	3	3
C411.2	3	3	3	-	-	-	-	-	-	-	-	-	3	3	3
C411.3	2	3	3	3	-	-	-	-	-	-	-	-	3	3	3
C411.4	2	3	2	2	-	-	-	-	-	-	-	-	3	3	3
C411.5	2	3	3	2	-	-	-	-	-	-	-	-	3	3	3
C411.6	2	2	3	3	-	-	-	-	-	-	-	-	3	3	3
C411	2.33	2.67	2.8	2.5	-	-	-	-	-	-	-	-	3	3	3

DATA MINING (R18CSE4102)

Course Outcomes(COs)	
C412.1	Be familiar with mathematical foundations of data mining tools.
C412.2	Understand and implement classical models and algorithms in data warehouse and data mining.
C412.3	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.
C412.4	Master data mining techno question various application silk social, scientific and environmental context.
C412.5	Develop skylines electing the appropriate data mining algorithm for solving practical problems

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C412.1	3	2	-	-	-	-	-	-	-	-	-	-	3	3	3
C412.2	3	3	3	-	-	-	-	-	-	-	-	-	3	3	3
C412.3	2	3	3	3	-	-	-	-	-	-	-	-	3	3	3
C412.4	2	3	2	2	-	-	-	-	-	-	-	-	3	3	3
C412.5	2	3	3	2	-	-	-	-	-	-	-	-	3	3	3
C412	2.33	2.67	2.8	2.5	-	-	-	-	-	-	-	-	3	3	3

CLOUD COMPUTING (R18CSE4143)

At the end of the course, the student will be able to mapping of Course

C413.1	Students will demonstrate knowledge of latest Technologies and how to create virtual machines in a single physical device
C413.2	Ability to create virtual machines by using hypervisor software
C413.3	Represent migration techniques and virtual machines can be migrated from one host to another host
C413.4	The ability to understand the Cloud Services like IAAS, PAAS, SAAS and Distributed Data Storage in Cloud
C413.5	Implements Monitoring and Management and Applications and SLA Management and Understand the AWS console create the S3 registration and creating buckets in the S3 Cloud
C413.6	Evaluate different hardware components related with Distributed Cloud and best Practices in Architecting

Course Articulation Matrix

CO	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
C413.1	3	2	2	1	1	-	1	-	1	-	-	1	2	2	-
C413.2	2	2	1	2	3	-	1	-	1	-	-	2	2	2	-
C413.3	1	3	2	2	3	-	2	-	2	-	-	3	2	2	-
C413.4	3	3	3	2	3	-	2	-	3	-	-	3	2	2	-
C413.5	1	2	2	3	2	-	2		2	-	-	3	2	2	-
C413.6	-	1	3	3	2	-	1	-	3	-	-	3	2	2	-
C413	2	3	2	3	3		2		2			3	2	2	-

INTERNET OF THINGS (R18CSE4152)

At the end of the course, the student will be able to mapping of Course

C414.1	Describing the Definition & characteristics of IOT and Physical design of IOT , its Protocols.(Understand)
C414.2	Discussing about Wireless Sensor Networks, IOT Levels and Templates domain specific IOT's. (Understand)
C414.3	Defining IOT Networks ,Network Function virtualization and difference between SDN and NFV for IOT basics of IOT system.(Remember)
C414.4	Analyzing Language features of Python and Constructing data structures and control of flow in Python.(Analyze)
C414.5	Describing IOT Physical devices and constructing Python program with Raspberry PI with focus of interfacing external gadgets. (Create)
C414.6	Describing IOT physical servers and Cloud offering , Design Python Web application Framework.(Create)

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C414.1	3	2	3	3	1	-	-	-	-	-	-	1	3	3	3
C414.2	3	3	3	3	-	-	-	-	-	-	-	1	3	3	3
C414.3	3	3	3	3	-	-	-	-	-	-	-	1	3	3	3
C414.4	3	2	3	\-	-	-	-	-	-	-	-	1	3	3	3
C414.5	3	3	3	3	-	-	-	-	-	-	-	2	3	3	3
C414.6	3	3	3	3	-	-	-	-	-	-	-	1	3	3	3
C414	3	2.6	3	2.6	-	-	-	-	-	-	-	1.5	3	3	3

E – COMMERCE (R18INF4185)

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

C415.1	Understand The E-Commerce Strategies And Value Chains (Understanding)
C415.2	Understand The E-Commerce (Understanding)
C415.3	Understand E-Commerce Infrastructure ,Its Applications And Supply Chain Management (Understanding)
C415.4	Know The Availability Of Latest Technology (Analyze)
C415.5	Apply E-Commerce In Business –To-Business Application (Applying)

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C415.1	3	-	-	3	-	-	-	-	-	-	-	2	3	3	-
C415.2	3	-	-	3	-	-	-	-	-	-	-	-	3	2	-
C415.3	3	2	3	2	3	-	-	-	-	-	-	2	3	3	-
C415.4	3	-	3	3	-	-	-	-	-	-	-	2	3	3	-
C415.5	3	-	-	-	-	-	-	-	-	-	-	2	3	2	-
C415	3	2.6	3	2.5	3	-	-	-	-	-	-	2	3	2.7	-

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DEPARTMENT CALENDAR – 2022-2023 (SEMESTER-I)

DAY S										JANUARY'23		FEBRUARY'23
SUNDAY		AUGUST'22									1	
MONDAY	1									NOVEMBER'22	2	LAB EXAM (III YR)
TUESDAY	2										3	LAB EXAM (III YR)
WEDNESDAY	3		SEPTEMBER'22								4	LAB EXAM (III YR)
THURSDAY	4		1								1	CLASS COMMITTEE MEETING-III YEAR
FRIDAY	5		2								2	CLASS COMMITTEE MEETING-II YEAR
SATURDAY	6		3								3	MID-I MARKS SUBMISSION(III YEAR)
SUNDAY	7	HOLIDAY	4	HOLIDAY	2	HOLIDAY	6	HOLIDAY	5	HOLIDAY	4	LAB EXAM (III YR)
MONDAY	8		5	TEACHERS DAY CELEBRATIONS	3	DUSSEH RA HOLIDAY	7				5	LAB EXAM (III YR)
TUESDAY	9	MOHARAM	6		4	DUSSEH RA HOLIDAY	8	GURUNANAK JAYANTHI	7		6	LAB EXAM (III YR)
WEDNESDAY	10		7	SUBMISSION OF HANDOUTS(III YR)	5	DUSSEH RA HOLIDAY	9		8		7	LAB EXAM (III YR)
THURSDAY	11		8		6	DUSSEHRA HOLIDAY	10		9		8	LAB EXAM (III YR)
FRIDAY	12		9		7	PAC-I	11		10	SYLLABUS COMPLETION STATUS – IV	9	LAB EXAM (III YR)
SATURDAY	13		10	WEEKLY ATTENDACE UPDATE(III YEAR)	8	GUEST LECTURE ON C PROGRAMMING(II YEAR)	12	INTER COLLEGE IDEATHON	11		10	LAB EXAM (III YR)
SUNDAY	14	HOLIDAY	11	HOLIDAY	9	HOLIDAY	13	HOLIDAY	12	HOLIDAY	11	LAB EXAM (III YR)
MONDAY	15	INDEPENDENCE DAY	12	DEPARTMENT MEETING	10		14	CLASS COMMITTEE MEETING-II(III YEAR)	13		12	LAB EXAM (III YR)
TUESDAY	16		13		11		15	SYLLABUS COMPELETION STATUS(II YR)	14		13	LAB EXAM (III YR)
WEDNESDAY	17		14		12		16		15		14	LAB EXAM (III YR)
THURSDAY	18		15		13		17		16		15	LAB EXAM (III YR)
FRIDAY	19		16	SYLLABUS COMPELETION STATUS(III YR)	14		18		17		16	LAB EXAM (III YR)
SATURDAY	20	SRI KRISHNA ASTAMI	17	ENGINEERS' DAY CELEBRATION	15	INTRA COLLEGE IDEATHON	19	DEPARTMENT LEVEL IDEATHON	18	ASSIGNMENT II SUBMISSION(III YR)	17	LAB EXAM (III YR)
SUNDAY	21	HOLIDAY	18	HOLIDAY	16	HOLIDAY	20	HOLIDAY	19	HOLIDAY	18	LAB EXAM (III YR)
MONDAY	22		19	CLASS COMMITTEE MEETING-I (III YEAR)	17	CLASS COMMITTEE MEETING -I(II YEAR)	21		20		19	LAB EXAM (III YR)
TUESDAY	23		20		18		22		21		20	LAB EXAM (III YR)
WEDNESDAY	24		21		19		23		22		21	LAB EXAM (III YR)
THURSDAY	25	COMMENCEMENT OF CLASSES (III, IV YR)	22		20	SYLLABUS COMPELETION STATUS - III	24		23	ATTENDANCE UPDATE(III YEAR)	22	LAB EXAM (III YR)
											23	LAB EXAM (III YR)

FRIDAY	26		23		21		25	SYLLABUS COMPLETION STATUS-III	24		27	END EXAM (III YR) & LAB EXTERNAL EXAMS(II YR)	24	
SATURDAY	27		24	WORKSHOP ON DATA SCIENCE	22		26	INDUSTRIAL VISIT FOR III & II YR	25	HOLIDAY	28	END EXAM (III YR) & LAB EXTERNAL EXAMS(II YR)	25	
SUNDAY	28	HOLIDAY	25	HOLIDAY	23	HOLIDAY	27	HOLIDAY	26	HOLIDAY	29	HOLIDAY	26	HOLIDAY
MONDAY	29		26	COMMENCEMENT OF CLASSES (II YR)	24	DEEPAVALI	28	MID-I (II YR)	27		30	LAB EXTERNAL EXAMS(II YR)	27	
TUESDAY	30	WEEKLY ATTENDANCE UPDATE(III YEAR)	27		25	ASSIGNMENT - I SUBMISSION	29	MID -I (II YR)	28		31	LAB EXTERNAL EXAMS(II YR)	28	
WEDNESDAY	31	VINAYAKA CHATURTHI	28		26		30	MID-I(II YR)	29	MID-II (III YR)				
THURSDAY			29	SYLLABUS COMPLETION STATUS II	27	MID-I (III YR)			30	MID-II (III YR)				
FRIDAY			30	CLASS TEST -I MARKS SUBMISSION	28	MID-I (III YR)			31	MID-II (III YR)				
SATURDAY					29	MID-I (III YR)								
SUNDAY					30	HOLIDAY								
MONDAY					31									

HOD

PRINCIPAL

Cryptography and Network Security

(R18CSE4101)

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

SYLLABUS

B.Tech-IV Year-I Semester

L T P C

3 0 0 3

COURSE NAME: (R18CSE4101)

CRYPTOGRAPHY & NETWORK SECURITY

Objectives:

- Explain the objectives of information security
- Understand various cryptographic algorithms
- Describe public key cryptosystem
- Understand intrusions and intrusion detection
- Discuss the fundamental ideas of public key cryptography

- Generate and distribute a PGP key pair and use the PGP package to send an encrypted e-mail message
- Discuss web security and firewall

UNIT-I

Security concepts: Introduction, The need of Security, Security approaches, Principles of Security, Types of Security Attacks, Security Services, Security Mechanisms, A model for Network Security.

Cryptography Concepts and Techniques: Introduction, Plain text and Cipher Text, Substitution Techniques, Transposition Techniques, Encryption and Decryption, Symmetric and Asymmetric Cryptography, Steganography, Key Range and Key Size, Possible types of Attacks

UNIT-II

Symmetric Key Ciphers: Block Cipher Principles and Algorithms DES, AES, and Blowfish, RC5, IDEA, Block Cipher Modes of Operations, Stream Ciphers, RC4, Asymmetric Key Ciphers: Principles of Public Key, RSA algorithm, Elgamal Cryptograph, Diffie-Hellman Key Exchange, Knapsack algorithm..

UNIT-III

Cryptographic Hash Function: Message Authentication Secure Hash Algorithm(SHA-512), Message Authentication Codes: Authentication requirements, HMAC, CMAC, Digital Signatures, Elgamal Digital signature scheme, Key management and distribution: Symmetric Key Distribution using Symmetric & Asymmetric Encryption, Knapsack Algorithm, distribution of public key keys : Kerberos, X.509 Authentication Services, Public-Key Infrastructure,.

UNIT-IV

Transport level Security: Web Security Considerations, Secure Socket Layer (SSL) and Transport Layer Security (TLS), HTTPS, Secure Shell(SSH),Wireless Network Security: Web Security, Mobile Device Security,IEEE 802.11 Wireless LAN,IEEE 802.11 I, Wireless LAN security.

UNIT-V

Email Security: Pretty Good Privacy , S/MIME IP Security: IP Security Overview, IP Security Architecture, Authentication Header, Encapsulating Security Payload, Combining Security Associations, Internet Key Case Studies on Cryptography and Security: Secure Multiparty Calculation , Virtual Elections, Single sign On, Secure Inter Branch Payment Transactions, Cross Site Scripting Vulnerability,

TEXT BOOKS:

- Cryptography and Network Security: William Stallings, Pearson Education, 4th Edition
- Cryptography and Network Security: Atul kahate, Mc Graw Hill, 2nd Edition

REFERENCES:

- Cryptography and Network Security: C K Shyamala, N Harini,
- Dr. T R Padmanabhan, Wiley India, 1st Edition
- Cryptography and network Security,Forouzn Mukhopadhyay ,McGraw Hill, 2nd edition
- Information Security, Principles and Practice: Mark Stamp, Wiley India
- Principles of Computer Security: VM Arthur Conklin, Greg White, TMH
- Introduction to Network Security: Neal Krawetz, CENGAGE Learning.
- Network Security and Cryptography: Bernard Menezes, CENGAGE Learning.

Outcomes:

After successful completion of the course, the learners would be able to Describe network security services and mechanisms.

Symmetrical and Asymmetrical cryptography.

Data integrity, Authentication, Digital Signatures.

Various network Security applications, IPSec, Firewall, IDS, Web security, Email security, and malicious software etc.



SRI INDU COLLEGE OF ENGG & TECH

LESSON PLAN

(Regulation :R18)

Department of COMPUTER SCIENCE AND ENGINEERING

Prepared on
Rev1:
Page:1 of 5

Sub. Code & Title	(R18CSE4101) CRYPTOGRAPHY & NETWORK SECURITY		
Academic Year: 2022-23	Year/Sem./Section	IV-I A,B,C,D	
Faculty Name & Designation	RAMAVATH VINOD KUMAR/P.HYMAVATHI Assistant Professor		

Lesson Plan

Cryptography and Network Security 2022-23

IV Year -I Semester CSE

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Proposed Date of Handling	CO/RBT
			From	To				
UNIT-I								
I	SECURITY CONCEPTS					17		
1.1	Introduction, The need of Security, Security approaches	T-1,T-2	1	3	BB	2	1/9/22 7/9/22	CO-1
1.2	Principles of Security	T-1,T-2	3	6	BB	1	8/9/22	CO-1
1.3	Types of Security Attacks, Security Services, Security Mechanisms	T-1,T-2	7	9	PPT	2	9/9/22 13/9/21	CO-1
1.4	A model for Network Security	T-1,T-3	22	24	BB	1	14/9/22	CO-1
1.5	Cryptography Concepts and Techniques	T-1,T-2	23		BB	1	15/9/22	CO-1
1.6	Introduction, plain Text, Cipher Text	T-1,T-2	33	36	BB	1	15/9/22	CO-1
1.7	Substitution Techniques, Transposition Techniques	T-1,T-2	29	44	BB	2	16/9/22 17/9/22	CO-1
1.8	Encryption and Decryption	T-1,T-2	23	23	BB	2	18/9/22 20/9/22	CO-1
1.9	Symmetric and Asymmetric Key Cryptography	T-1,T-2	16	17	NPTEL Video	1	21/9/22	CO-1
1.10	Steganography	T-1,T-2	26	28	Student Seminar	1	22/9/22	CO-1
1.11	Key Range and Key Size	T-1,T-2	26	26	BB	1	23/9/22	CO-1



SRI INDU COLLEGE OF ENGG & TECH

LESSON PLAN

(Regulation :R18)

Department of COMPUTER SCIENCE AND ENGINEERING

Prepared
on Rev1:
Page: 2 of 5

Sub. Code & Title	(R18CSE4101) CRYPTOGRAPHY & NETWORK SECURITY		
Academic Year: 2022-23	Year/Sem./Section	IV-I A,B,C,D	
Faculty Name & Designation	RAMAVATH VINOD KUMAR/P.HYMAVATHI Assistant Professor		

1.12	Possible types of Attacks	T-1,T-2	24	24	BB	2	27/9/22 29/9/22	CO-1
	Review	Signature of the HOD/Coordinator						
UNIT-II								
II	SYMMETRIC KEY CIPHERS					14		
2.1	Symmetric Key Ciphers	T-1,R-1	49		PPT	2	30/9/22 4/10/22	CO-2
2.2	Block Cipher Principles, DES, AES, Blowfish	T-1,R-1	79		BB	2	5/10/22 7/10/22	CO-2
2.3	RC5,IDEA	T-2,R-1	114, 99	120, 109	BB	1	11/10/22	CO-2
2.4	Block Cipher Operations	T-1,R-1	83	89	PPT	1	12/10/22	CO-2
2.5	Stream Ciphers, RC4	T-2	116		BB	2	13/10/22 18/10/22	CO-2
2.6	Asymmetric Key Ciphers	T-1	163		BB	1	21/10/22	CO-2
2.7	Principles of Public Key Cryptosystems	T-1	164	173	BB	1	25/10/22	CO-2
2.8	RSA Algorithm,Elgamal Cryptography	T-1	173	199	BB	2	26/10/22	CO-2
2.9	Diffie- Hellman Key Exchange	T-1	182		BB	1	27/10/22	CO-2
2.10	Knapsack Algorithm	T-2	193		BB	1	28/10/22	CO-2
	Review	Signature of the HOD/Coordinator						



SRI INDU COLLEGE OF ENGG & TECH

LESSON PLAN

(Regulation :R18)


Department of COMPUTER SCIENCE AND ENGINEERING

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Sub. Code & Title	(R18CSE4101) CRYPTOGRAPHY & NETWORK SECURITY		
Academic Year: 2022-23	Year/Sem./Section	IV-I A,B,C,D	
Faculty Name & Designation	RAMAVATH VINOD KUMAR/P.HYMAVATHI Assistant Professor		

UNIT-III

III	CRYPTOGRAPHIC HASH FUNCTIONS	12							
3.1	Message Authentication	T-1,R-1	238	249	BB	2	29/10/22 30/11/22	CO-3	
3.2	Secure Hash Algorithm(SHA-512)	T-1,T-2	281	284	BB	1	1/11/22	CO-3	
3.3	Message Authentication Codes: Authentication Requirements	T-1,T-2	238	249	PPT	1	2/11/22	CO-3	
3.4	HMAC, CMAC	T-1,T-2	281	297	BB	1	3/11/22	CO-3	
3.5	Digital Signatures	T-1,R-1	299	314	LCD	2	15/11/22 16/11/22	CO-3	
3.6	Elgamal Digital Signature Scheme	T-2R-1	194		BB	1	17/11/22	CO-3	
3.7	Key Management and Distribution:								
3.7.1	Symmetric Key Distribution Using Symmetric & Asymmetric Encryption	T-2	183	186	BB	1	18/11/22	CO-3	
3.8	Distribution of Public Keys	T-1	324		BB	1	19/11/22	CO-3	
3.9	Kerberos	T-1	324	340	BB	1	22/11/22	CO-3	
3.10	X.509 Authentication services, public key infrastructure	T-1	341	349	BB	1	23/11/22	CO-3	
	Review	Signature of the HOD/Coordinator							


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	Faculty Name & Designation		RAMAVATH VINOD KUMAR/P.HYMAVATHI Assistant Professor		

UNIT-IV

IV	Transport – level Security:					8			
4.1	Web Security Considerations,	T-1,R-1	441	443	BB	1	25/11/22	CO-4	
4.2	Secure Socket Layer and Transport Layer Security	T-1,R-1	444	461	BB	2	26/11/22 27/11/22	CO-4	
4.3	HTTPS, Secure Shell(SSH)	T-2	282	282	BB	1	29/11/22	CO-4	
4.4	Wireless Network Security: Wireless Security Mobile Device Security	T-1	581	585	BB	2	30/11/22 1/12/22	CO-4	
4.5	IEEE 802.11 Wireless LAN	T-1	589		BB	1	2/12/22	CO-5	
4.6	IEEE 802i Wireless LAN Security	T-1	595		BB	1	3/12/22	CO-5	
Review		Signature of the HOD/Coordinator							

UNIT-V

V	E-Mail Security:					14		
5.1	Pretty Good Privacy, S/MIME	T-2	305,313	313,318	BB	1	6/12/22	CO-4
5.2	IP Security	T-4	661		BB	1	7/12/22	CO-4
5.3	IP Security Overview, IP Security Architecture	T-4	662	664	BB	2	8/12/22 10/12/22	CO-4
5.4	Authentication Header, Encapsulating Security Payload,	T-4	666,673	669,680	BB	2	13/12/22 15/12/22	CO-4
5.5	Combining Security Associations	T-1	418	440	BB	2	16/12/22 17/12/22	CO-5
5.6	Internet Key Exchange Case Studies on Cryptography and Security	T-4	666		BB	1	18/12/22	CO-5

	SRI INDU COLLEGE OF ENGG & TECH LESSON PLAN (Regulation :R18) Department of COMPUTER SCIENCE AND ENGINEERING			Prepared on Rev1: Page: 5 of 5	
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5.7	Secure Multiparty Calculation, Virtual Elections	T-2	141	142	PPT	2	2/12/22 6/12/22	CO-6
5.8	Single sign On, Secure Inter-branch Payment Transactions	T-2	392	395	BB	2	7/12/22	CO-6
5.9	Cross site Scripting Vulnerability	T-2	256	258	BB	1	8/12/22	CO-6

TEXT BOOKS:


- T1.** Cryptography and Network Security: William Stallings, Pearson Education, 4th Edition
- T2.** Cryptography and Network Security: Atul kahate, Mc Graw Hill, 3rdEdition
- T3.** Cryptography and Network Security: William Stallings, Pearson Education, 2nd Edition
- T4.** Cryptography and Network Security: William Stallings, Pearson Education, 7th Edition

REFERENCES:

- 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	
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	Academic Year: 2022-23	Year/Sem./Section	IV-I A,B,C,D	
	Faculty Name & Designation	RAMAVATH VINOD KUMAR/P.HYMAVATHI Assistant Professor		

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

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

UNIT-1: Security concepts			
1 MARKS QUESTIONS		BT Level	Course Outcome
1.	What are the types of security attacks?	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	CO1
10.	Define steganography?	1	CO1
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 with example?	1	CO1
4.	Distinguish between symmetric key and asymmetric key cryptography.	4	CO1
5.	a. Write about substitution techniques. b. Write about transposition techniques.	2	CO1



SRI INDU COLLEGE OF ENGG & TECH

QUESTION BANK

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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	CO1
9.	Classify the following plain text P="TRUST MEE" into cipher text by Caesar cipher with key k= 4.	4	CO1
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	CO1

Unit -II : SYMMETRIC KEY CIPHERS

1 MARK QUESTIONS

1.	What are the components of conventional encryption principles?	1	CO2
2.	What are the Conventional encryption algorithms?	1	CO2
3.	What are public key cryptosystems algorithms?	1	CO2
4.	What are applications of public key cryptography?	1	CO2
5.	Define product cipher?	1	CO2
6.	Explain RC4 Location?	2	CO2
7.	Determine session key and master key?	5	CO2
8.	Determine link and end-to-end encryption?	5	CO2
9.	Simplify the design criteria of block cipher?	4	CO2
10.	Explain advantages of counter mode?	2	CO2

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5 MARKS QUESTIONS

1	Discuss Feistel's cipher structure with a neat diagram?	6	CO2
2.	Write in detail about simple-DES and AES.	2	CO2
3.	Write about the various key distribution methods?	2	CO2
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	CO2
5.	Discuss ate RSA and Diffie Hellman algorithm.	6	CO2
6.	Show AES encryption and decryption process with neat sketch?	2	CO2
7.	Explain briefly about RSA algorithm and IDEA in a detail manner?	2	CO2
8	Explain about Blowfish Algorithm with example	2	CO2
9	Explain briefly how diffusion and confusion increases complexity to thwart the cryptanalyst?	2	CO2
10	Explain all the principles of the public key crypto systems? (R14-NOV/DEC 17)	2	CO2

Unit – III : CRYPTOGRAPHY HASH FUNCTIONS

1 MARK QUESTIONS

1.	Define digital signature?	1	CO3
2.	What are advantages and disadvantages of Kerberos?	1	CO3
3	What is Hash function?	1	CO3
4.	Define Message Authentication code?	1	CO3
5	What are the parameters of HMAC algorithms?	1	CO3
6.	Discuss HMAC and CMAC?	6	CO3
7	Extend key principles of Biometric Authentication?.	2	CO3
8.	Enumerate uses of public key cryptography?	1	CO3
9.	Explain the rules of public and private key?	2	CO4
10.	Define digital signatures?	1	CO4

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5 MARKS QUESTIONS

1.	Write in detail about Digital signature? (R16-DEC 19 & R14 NOV/DEC 17)	2	CO3
2.	What is X.509 authentication service? (R16-DEC 19)	1	CO3
3.	Write short notes on message authentication code?	2	CO3
4.	Write the importance of secure hash function with relevant examples? Differentiate between direct digital signature and arbitrated digital signature?	5	CO3
5.	Discuss Kerberos v4 and Kerberos v5?	6	CO3
6.	Determine how X.509 certificate is revoked?	5	CO3
7.	Describe briefly what are the different kinds of the authentication requirements are there for message authentication?	6	CO3
8.	Describe why Kerberos is more secure than the other security mechanisms? .(R16-MAR21 & R16-OCT20)	6	CO 4
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	CO4
2.	Define TLS?	1	CO4
3.	Write about web security considerations?	1	CO4
4.	Define HTTPS?	1	CO4
5.	Define SSH?	1	CO
6.	Write about mobile device security?	1	CO5
7.	Write 4 properties of HTTP?	2	CO5
8.	Define IEEE802.11?	1	CO4
9.	Write about wireless LAN?	1	CO4
10.	Where we use wireless LAN?	2	CO5

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5 MARKS QUESTIONS

1.	Explain about web security considerations?	2	CO4
2.	What is secure socket layer ,briefly explain about it?	2	CO5
3.	Write down differences between SSL and TLS?	6	CO4
4.	Explain about transport layer security?	2	CO4
5.	Explain about IEEE802.11 with neat diagram?	2	CO4
6.	Write about HTTPS detail?	6	CO4
7.	Explain about secure shell?	5	CO4
8.	Write ashort notes on wireless LAN	1	CO4
9.	Explain about IEEE802.1i?	2	CO4
10.	Write about web security requirements?	1	CO5

Unit-V E-MAIL SECURITY

1 MARK QUESTIONS

1.	What is Email Security?	1	CO5
2.	What is cookie?	1	CO5
3.	What are authentication and confidentiality?	1	CO5
4.	What is tunnel mode?	1	CO5
5.	What are benfits of IPsec?	1	CO5
6.	List out notations used in PGP?	1	CO5
7.	Explain about Email compatibility?	1	CO6
8.	List MIME content Type?	1	CO6
9.	Define Authentication Header?	2	CO5
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: 6 of 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	CO6
9	Describe and explain how the security will be provided in Email?	2	CO6
10	Define payload? And discuss about encapsulating security payload?	1	CO6

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 –I Semester –End Examination (Regular) Febuary-2022**(R18CSE4101) -CRYPTOGRAPHY & NETWORK SECURITY**

(Computer science and Engineering)

Duration :3Hrs**5.2.2022****Max Marks:70M****Section –A**Answer All the following questions

Marks:5Qx4M=20M

1. Define Cryptography and cryptanalysis?
2. What are the components of conventional encryption principles?
3. Extend key principles of Biometric Authentication?.
4. Write 4 properties of HTTP? Define IEEE802.11?
5. What are authentication and confidentiality?

Section-BAnswer any FIVE questions choosing at least one from each unit**UNIT-I**

6. Distinguish between symmetric key and asymmetric key cryptography.

(OR)

7. With a neat diagram write about a model for Network security.

UNIT-II

8. Discuss ate RSA and Diffie Hellman algorithm.

(OR)

9. Prove encryption and decryption using RSA algorithm for a) $p=3,q=11,e=7,m=5$
b) $p=11,q=13,e=11,m=7$.

UNIT-III

10. Determine how X.509 certificate is revoked?

(OR)

11. Describe the message digest function in digital signatures and explain with an example?

UNIT-IV

12. Explain about IEEE802.11 with neat diagram?

(OR)

13. Write down differences between SSL and TLS?

UNIT-V

14. Write briefly about Encapsulating security payload format?

(OR)

Justify why S/MIME is a security enhancement to MIME internet email formatstandard?



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Faculty Name & Designation	RAMAVATH VINOD KUMAR/P.HYMAVATHI Assistant Professor		

Lesson Plan

Cryptography and Network Security

2022-23 IV Year –I Semester CSE

No. of classes required	Topics	Reference	Teaching aids used LCD/OHP/BB
13	UNIT-1		
1	Introduction	T1	BB
1	The need of Security, Security approaches	T1	BB
1	Principles of Security	T2	BB
1	Types of Security Attacks, Services, Security Mechanisms	T2	LCD
1	A model for Network Security	T2	LCD
2	Cryptography Concepts and Techniques	T1	BB
1	Introduction, plain Text, Cipher Text	T1	BB
1	Substitution Techniques, Transposition Techniques	T1	BB
1	Encryption and Decryption	T1	BB
1	Symmetric and Asymmetric Cryptography	T1	BB
1	Steganography		Student seminar
1	Key Range and Key Size, Possible Types of Attacks	T1	BB
10	UNIT-II		
6	Symmetric Key Ciphers	T1	BB
4	Block Cipher Principles ,DES, AES, and Blowfish,RC5,IDEA	T1	BB
1	Block Cipher Operation		Student seminar
1	Stream Ciphers, RC4	T1	BB

4	Asymmetric Key Ciphers	T1	BB
2	Principles of Public Key Cryptosystems	T1	BB
1	RSA Algorithm, Elgamal Cryptography, Diffie- Hellman key Exchange	T2	BB
1	Knapsack Algorithm	T1	BB
14	UNIT-III		
1	Cryptographic Hash Functions: Introduction	T1	BB
1	Message Authentication , Secure Hash Algorithm(SHA-512)	T1	BB
1	Message Authentication Codes: Authentication requirements	T2	BB
2	HMAC, CMAC		Student senminar
2	Digital Signatures, Elgamal Digital Signature Scheme	T1	LCD
4	Key Management and Distribution: Symmetric Key Distribution Using Symmetric & Asymmetric Encryption	T1	BB
2	Distribution of Public Keys, Kerberos, X.509 Authentication Service,	T1	BB
1	Public- Key Infrastructure	T1	BB
11	UNIT-IV		
1	Transport level security	T1	BB
2	Web security considerations, secure socket layer		Student seminar
2	Transport level security, HTTPS	T1	BB,LCD
1	Secure Shell(SSH)	T1	BB
1	Wireless network security	T1	BB
2	Wireless security ,mobile device security	T2	BB
1	IEEE802.11,Wireless LAN, IEEE802.11i	R4	BB
1	Wireless LAN security	T1	BB
15	UNIT-V		
1	Email security	T1	BB
1	Pretty Good Privacy	T1	BB
1	S/MIME	T2	BB
6	IP Security		LCD
2	IP Security Overview, IP Security Architecture	T1	BB
2	Authentication Header, Encapsulating Security Payload	T1	BB
1	Combining Security Associations	T1	BB
1	Internet key exchange		Student Seminar
6	Case Studies on Cryptography and		Implementation

	Security:		
1	Secure Multiparty Calculation, Virtual Elections	T1	BB
1	Single sign On	T1	BB
2	Secure Inter Branch Payment Transactions	W1	Implementation
2	Cross Site Vulnerability	W1	Implementation

Expected Total No. of classes = 63

TEXT BOOKS:

T1. Cryptography and Network Security: William Stallings, Pearson Education, 4th Edition

T2. Cryptography and Network Security: Atul kahate, Mc Graw Hill, 2nd Edition

REFERENCES:

R1. Cryptography and Network Security: C K Shyamala, N Harini,

Dr. T R Padmanabhan, Wiley India, 1st Edition

R2. Cryptography 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

Data Mining

(R18CSE4102)

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

B.Tech. - IV Year – I Semester

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(R18CSE4102) Data Mining

UNIT I

Data Warehousing, Business Analysis and On-Line Analytical Processing (OLAP) : Basic Concepts – Data Warehousing Components – Building a Data Warehouse – Database Architectures for Parallel Processing – Parallel DBMS Vendors – Multidimensional Data Model – Data Warehouse Schemas for Decision Support, Concept Hierarchies -Characteristics of OLAP Systems – Typical OLAP Operations, OLAP and OLTP.

UNIT II

Data Mining – Introduction : Introduction to Data Mining Systems – Knowledge Discovery Process – Data Mining Techniques – Issues – applications- Data Objects and attribute types, Statistical description of data, Data Preprocessing – Cleaning, Integration, Reduction, Transformation and discretization, Data Visualization, Data similarity and dissimilarity measures.

UNIT III

Data Mining – Frequent Pattern Analysis : Mining Frequent Patterns, Associations and Correlations – Mining Methods- Pattern Evaluation Method – Pattern Mining in Multilevel, Multi Dimensional Space – Constraint Based Frequent Pattern Mining, Classification using Frequent Patterns

UNIT IV

Classification and Clustering : Decision Tree Induction – Bayesian Classification – Rule Based Classification – Classification by Back Propagation – Support Vector Machines — Lazy Learners – Model Evaluation and Selection-Techniques to improve Classification Accuracy. Clustering Techniques – Cluster analysis-Partitioning Methods – Hierarchical Methods – Density Based Methods – Grid Based Methods – Evaluation of clustering – Clustering high dimensional data- Clustering with constraints, Outlier analysis-outlier detection methods.

UNIT V:

Applications and Trends In Data Mining : Data mining applications, Data Mining Products and Research Prototypes, Additional Themes on Data Mining and Social Impacts Of Data Mining.

TEXT BOOK:

1. Jiawei Han and Micheline Kamber, —Data Mining Concepts and Techniques, Third Edition, Elsevier, 2012.
2. Alex Berson and Stephen J.Smith, —Data Warehousing, Data Mining & OLAP, Tata McGraw – Hill Edition, 35th Reprint 2016.

REFERENCES:

1. K.P. Soman, Shyam Diwakar and V. Ajay, —Insight into Data Mining Theory and Practice, Eastern Economy Edition, Prentice Hall of India, 2006.
2. Ian H.Witten and Eibe Frank, —Data Mining: Practical Machine Learning Tools and Techniques, Elsevier, Second Edition.



SRI INDU COLLEGE OF ENGG & TECH

**LESSON PLAN
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Department of COMPUTER SCIENCE AND ENGINEERING

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Sub. Code & Title **R18CSE4102 & DATA MINING**

Academic Year: 2022-23 **Year/Sem./Section** **IV/1**

Faculty Name & Designation **K.NAVEEN CHAKRAVARTHI Asst.prof**

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									
I	Data Warehousing, Business Analysis and On-Line Analytical Processing (OLAP)					11			
1.1	Data Warehousing, Business Analysis and On-Line Analytical Processing (OLAP)	T1, R 5	1.1	1.3	Black board	01		CO1/L1	
1.2	Basic Concepts Data Warehousing Components Building a Data Warehouse	T1, R 5	1.3	1.9	Black board	01		CO1/L5	
1.3	Data Warehouse Database Architectures for Parallel Processing	T1, R 5	1.51	1.55	Black board	01		CO1/L6	
1.4	Parallel DBMS Vendors	T1, R 5	1.82	1.84	Black board	01		CO1/L2	
1.5	Multidimensional Data Model	T1, R 5	1.84	1.89	Black board	01		CO1/L3	
1.6	Data Warehouse Schemas for Decision Support	R 5, R7	1.91	1.106	Black board	01		CO1/L1	
1.7	Concept Hierarchies	R 5, R7	1.134	1.37	Black board	01		CO1/L1	
1.8	Typical OLAP Operations	R 5,W6	2.1	2.3	Presentation	01		CO1/L1	
1.9	Characteristics of OLAP Systems	R 5,W7	2.3	2.50	Presentation	01		CO1/L2	
1.10	OLAP and OLTP	R 5,W8	2.22	2.25	Presentation	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	
UNIT –II									
II	Data Mining					11			
2.1	Data Mining – Introduction	R 5, R7	3.1	3.4	Demonstration	02		CO2/L2	
2.2	Data Mining – Introduction :Introduction to Data Mining Systems	R7,R 5	3.5	3.43	Charts	01		CO2/L5	
2.3	Knowledge Discovery Process	T1,R 5	3.46	3.48	Charts	01		CO2/L4	
2.4	Data Mining Techniques	T1,R 5	3.46	3.48	Demonstration	01		CO2/L2	
2.5	Issues	T1,R 5	4.20	4.20	Black board	02		CO2/L2	



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LESSON PLAN

(Regulation :R18)

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Academic Year: 2022-23	Year/Sem./Section	IV/1	
Faculty Name & Designation	K.NAVEEN CHAKRAVARTHI Asst.prof		

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									
2.6	Data Objects and attribute types	T1,R 5	4.41	4.41	Black board	01		CO2/L3	
2.7	Statistical description of data, Data	T1,R 5	4.2	4.10	Demonstration	01		CO2/L1	
2.8	Data Preprocessing	T1, R5	4.19	4.24	Demonstration	01		CO2/L1	
2.9	Data Preprocessing Integration, Reduction Cleaning,	T1, R 5	4.6	4.10	Chart	01		CO2/L4	
	Review	Signature of the HOD/Coordinator							

UNIT- III									
III	Data Mining – Frequent Pattern Analysis					06			
3.1	Mining Frequent Patterns, Associations	R 5, W12	5.1	5.6	Presentation	01		CO3/L4	
3.2	Mining Methods- Pattern Evaluation Method Pattern Mining in Multilevel	R 5, W21	5.15	5.23	Presentation	01		CO3/L2	
3.3	Multi-Dimensional Space	T1, R 5			Black board	01		CO3/L5	
3.4	Evaluation Method Pattern	T1, R 5	5.26	5.33	Black board	01		CO4/L8	
3.5	Constraint Based Frequent Pattern Mining,	T1, R 5	5.52	5.73	Black board	01		CO4/L6	
3.6	Classification using Frequent Patterns	T1, R 5	5.99	5.114	Black board	01		CO4/L4	
	Review	Signature of the HOD/Coordinator							

UNIT-IV								
IV	Classification and Clustering					11		
4.1	Decision Tree Induction	R 5, W12	6.1	6.5	Presentation	01		CO4/L3
4.2	Bayesian Classification	R 5, W13	6.11	6.14	Presentation	02		CO4/L2
4.3	Rule Based Classification	T1, R 5	6.30	6.58	Black board	02		CO5/L3
4.4	Classification	T1, R 5	6.27	6.70	Black board	02		CO5/L4
4.5	Model Evaluation and Selection-Techniques to	R 5, W7,8	6.27	6.70	Presentation	02		CO5/L5



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	improve Classification Accuracy							
4.6	Cluster analysis, Hierarchical Methods	R 5, W8,9	5.99	5.114	Presentation	02		CO5/L2
	Review	Signature of the HOD/Coordinator						
UNIT-V								
V	Applications and Trends In Data Mining					06		
5.1	Data mining application	R5,W15,16	8.1	8.2	Presentation	01		CO6/L2
5.2	Data Mining Products	R5,W16,17	8.2	8.7	Presentation	01		CO6/L3
5.3	Additional Themes on Data Mining and Social Impacts Of Data Mining.	T1, R 5	8.7	8.36	Black board	01		CO6/L2
5.4	Additional Themes on Data Mining and Social Impacts Of Data Mining.	T1, R 5	8.2	8.36	Black board	01		CO6/L3
5.5	Research Prototypes,	T1, R 5	8.25	8.27	Black board	01		CO6/L4
5.6	Social Impacts Of Data Mining	R 5, W18	7.1	7.2	Presentation	01		CO6/L1
	Review	Signature of the HOD/Coordinator						

LIST OF TEXT BOOKS AND REFERENCES

Text Books:

- T1. Jiawei Han and MichelineKamber, —Data Mining Concepts and Techniques, Third Edition, Elsevier, 2012.
- T2. Alex Berson and Stephen J.Smith, —Data Warehousing, Data Mining & OLAP, Tata McGraw – Hill Edition, 35th Reprint 2016.
- T3. Introduction to Data Mining by Tan, Steinbach & Kumar.

Reference Books:

- R1. K.P. Soman, ShyamDiwakar and V. Ajay, —Insight into Data Mining Theory and Practice, Eastern Economy Edition, Prentice Hall of India, 2006.
- R2. Ian H.Witten and Eibe Frank, —Data Mining: Practical Machine Learning Tools and Techniques, Elsevier, Second Edition.
- R3. An Introduction to Statistical Learning: with Applications in R
- R4. Modeling With Data by Ben Clemens

Web links

- W1. <https://examupdates.in> > Study Material**



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- W2. <https://examupdates.in/data-mining-lecture-notes/>
- W3. <https://examupdates.in/data-mining-lecture-notes/>
<http://biet.ac.in/coursecontent/cse/DATA%20MINING%20COURSE%20PLANNER%20IV%20CSE%202021>
- W4. <https://www.jntufastupdates.com/jntuk-r16-3-2-dwdm-material/>
- W5. <https://nptel.ac.in/courses/106/105/106105174/>
- W6. <https://www.geethanjaliinstitutions.com/engineering/cse.html>

CONTENT BEYOND THE SYLLABUS

S.No	Topics	Proposed Actions	Date	Resource Person/Mode	POs	PSOs
1.	INTERNATIONALDATAENCRYPTION STANDARD(IDEA)	Classroom(2Periods)	3/1/22	Text Book	PO1,PO2,PO3	PSO1,PSO2
2.	RC5	Classroom(2 Periods)	3/1/22	Text Book	PO1,PO2,PO3	PSO1,PSO2

ASSIGNMENT

S.No.	Assignment Questions	Course Outcome	Books To be Referred	Date Of Announcement	Date Of Submission
1.	Typical OLAP Operations	CO-1	T1	26/10/21	1/11/21
2.	Statistical description of data, Data	CO-2	T1	26/10/21	1/11/21
3.	Mining Frequent Patterns, Associations and	CO-3	T1	26/10/21	1/11/21
4.	Rule Based Classification	CO-3	T1	26/10/21	1/11/21
5.	Data mining application	CO-4	T1	26/10/21	1/11/21

**SRI INDU COLLEGE OF ENGG & TECH****LESSON PLAN****(Regulation :R18)****Department of COMPUTER SCIENCE AND ENGINEERING**Prepared on
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Page: 5 of 5**Sub. Code & Title****R18CSE4102 & DATA MINING****Academic Year: 2022-23****Year/Sem./Section****IV/1****Faculty Name & Designation****K.NAVEEN CHAKRAVARTHI Asst.prof****SELF STUDY TOPICS**

S.No	Topics	Proposed Actions	Date	Resource Person/Mode	POs	PSOs
1.	Data mining application	Classroom (2Periods)	8/1/22	Text Book	PO1,PO2,PO3	PSO1,PSO2
2.	Data Visualization	Classroom (2 Periods)	8/1/22	Text Book	PO1,PO2,PO3	PSO1,PSO2

Prepared by

Recommended and Approved by

(Signature & Name)

HOD/IT



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Faculty Name & Designation **K.NAVEEN CHAKRAVARTHI Asst.Prof.**

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

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

UNIT-1 Data Warehousing, Business Analysis and On-Line Analytical Processing (OLAP)

1MARKS QUESTIONS		BT Level	Course Outcome
1.	Define data warehouse. ?	1	CO1
2.	Difference between operational database and data warehouse?	2	CO1
3.	List the components of data warehousing architecture?	1	CO1
4.	Identify the need for having separate data warehouse?	3	CO1
5.	Differentiate fact and dimension table?	2	CO1
6.	What is parallel DBMS?	1	CO1
7.	Recall the benefits of data cube ?	1	CO1
8	Show the structure of fact constellation schema ?	2	CO1
9	List the characteristic of Online Transactional Processing (OLTP)?	1	CO1
10	Find the role of data mart in data warehouse ?	1	CO1
5 MARKS QUESTIONS			
1.	Compare OLAP with OLTP in terms of data processing?	4	CO1
2.	Explain the data warehouse components with suitable diagram?	2	CO1
3.	Illustrate the process of building a data warehouse with necessary examples?	2	CO1
4.	Classify the database architecture for parallel processing?	4	CO1
5.	Examine the need of multi-dimensional data model for constructing data warehouse ?	4	CO1
6.	Justify the role of star, snowflake and fact constellation schemas in data warehouse design ?	5	CO1
7.	Outline the procedures in concept hierarchies with suitable examples?	2	CO1
8	Summarize the various OLAP operations in multi-dimensional data model?	2	CO1
9	Explain the three tier data warehouse architecture with suitable diagram?	2	CO1
10.	Determine the characteristics of online analytical processing system ?	5	CO1

Unit -II : Data Mining

1 MARKS QUESTIONS

1.	What is data mining?	1	CO2
2.	Relate knowledge extraction with data mining ?	2	CO2
3.	List the components of typical data mining system ?	1	CO2



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4.	Why preprocess the data?	2	CO2
5.	Recall the issues in data cleaning ?	1	CO2
6.	Define noisy data ?	1	CO2
7.	What is smoothing in data cleaning?	1	CO2
8	Distinguish between generalization and normalization ?	4	CO2

5 MARKS QUESTIONS

1	Outline the major issues in data mining ?	2	CO2
2.	Illustrate the knowledge discovery process with suitable examples ?	2	CO2
3.	Summarize the applications of data mining system ?	2	CO2
4.	Identify the methods for missing values in data cleaning ?	3	CO2
5.	Explain the process of smoothing the noisy data with necessary examples ?	2	CO2
6.	Demonstrate the data integration ?	2	CO2
7.	Explicate the data transformation process with suitable examples ?	2	CO2
8.	Identify the issues in data reduction process ?	3	CO2
9.	Illustrate the discretization and concept hierarchy generation for numerical data ?	2	CO2
10.	Exemplify the concept hierarchy generation for categorical data ?	2	CO2

Unit – III : Data Mining – Frequent Pattern Analysis

1 MARKS QUESTIONS

1.	Define frequent patterns ?	1	CO3
2.	Difference between support and confidence?	4	CO3
3	What is closed items sets?	1	CO3
4.	Difference between join and prune step in Apriori algorithm ?	4	CO3
5	What is global candidate itemsets?	1	CO3
6.	Recall the features of sampling ?	1	CO3
7	Show the structure of cuboids ?	1	CO3
8.	Are all strong rules interesting? Justify your answer ?	5	CO3
9.	List the constraints in constraint based mining ?	1	CO3
10.	How to frame association rules?	1	CO3

5 MARK QUESTIONS

1.	Illustrate the market basket analysis with suitable examples ?	2	CO3
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2	Compare and contrast frequent itemsets, closed itemsets in terms of association rules ?	4	CO3																				
3.	Demonstrate the Apriori algorithm for finding frequent itemsets using candidate generation ?	2	CO3																				
4	Show the process of generating association rules from frequent itemsets ?	2	CO3																				
5.	Explain the FP growth algorithm for finding the frequent itemsets using suitable examples ?	2	CO3																				
6	Determine the frequent itemsets for the following transactional data using Apriori algorithm ?	5	CO3																				
7.	<table border="1"> <thead> <tr> <th>TID</th> <th>List of Item _IDs</th> </tr> </thead> <tbody> <tr><td>T100</td><td>I1,I2,I5</td></tr> <tr><td>T200</td><td>I2,I4</td></tr> <tr><td>T300</td><td>I2,I3</td></tr> <tr><td>T400</td><td>I1,I2,I4</td></tr> <tr><td>T500</td><td>I1,I3</td></tr> <tr><td>T600</td><td>I2,I3</td></tr> <tr><td>T700</td><td>I1,I3</td></tr> <tr><td>T800</td><td>I1,I2,I3,I5</td></tr> <tr><td>T900</td><td>I1,I2,I3</td></tr> </tbody> </table>	TID	List of Item _IDs	T100	I1,I2,I5	T200	I2,I4	T300	I2,I3	T400	I1,I2,I4	T500	I1,I3	T600	I2,I3	T700	I1,I3	T800	I1,I2,I3,I5	T900	I1,I2,I3	6	CO3
TID	List of Item _IDs																						
T100	I1,I2,I5																						
T200	I2,I4																						
T300	I2,I3																						
T400	I1,I2,I4																						
T500	I1,I3																						
T600	I2,I3																						
T700	I1,I3																						
T800	I1,I2,I3,I5																						
T900	I1,I2,I3																						
8.	Summarize the key features in multilevel association rule mining ?	2	CO3																				
9.	Analyze the impact of multidimensional association rules in data mining ?	4	CO3																				
10.	Justify the importance of constraint based association rule mining ?	2	CO3																				

Unit-IV :Classification and Clustering

1 MARKS QUESTIONS

1.	What is decision tree?	1	CO4
2.	List the criteria for evaluating classification and prediction?	1	CO4
3.	Difference between supervised learning and unsupervised learning?	4	CO4
4.	Mention the role of tree pruning in decision tree ?	1	CO4
5.	Give the formulae for Bayes theorem ?	1	CO4
6.	Define rule pruning ?	1	CO4
7.	What is neural network?	1	CO4
8	What is backpropagation?	1	CO4
9	Relate lazy learners with classification problem?	2	CO4
10	Write the difference between clustering and classification?	2	CO4



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5 MARK QUESTIONS

1.	Examine the efficiency of classification by decision tree induction ?	4	CO4
2.	How does the Bayesian Classification works? Explain with examples?	2	CO4
3.	Analyze the rule based classification in terms of decision tree ?	4	CO4
4.	Determine the efficiency of classification by backpropagation with necessary examples?	5	CO4
5.	Demonstrate the support vector machine using linearly separable and linearly inseparable data ?	2	CO4
6.	Justify the role of K-nearest neighbor classifiers in lazy learners ?	5	CO4
7.	Compare k-means algorithm with k-medoids in terms of classical partitioning?	4	CO4
8.	Classify the hierarchical clustering methods ?	4	CO4
9.	Show the process of clustering in high dimensional data ?	2	CO4
10.	Justify the importance of outlier analysis in clustering ?	5	CO4

Unit-V: Applications and Trends In Data Mining

1 MARKS QUESTIONS

1.	Recall few examples of data mining in retail industry?	1	CO5
2.	List the applications data mining ?	1	CO5
3.	Recall the trends in data mining ?	1	CO5
4.	What is statistical data mining?	1	CO5
5.	Define recommender systems in data mining?	1	CO5
6.	Mention the feature of collaborative filtering ?	2	CO5
7.	What is ubiquitous data mining?	1	CO5
8.	List any four theories of data mining ?	1	CO5
9.	Write the benefits of data marts ?	1	CO5
10.	What kind of data can be mined?	1	CO5

5 MARK QUESTIONS

1.	How to use the data mining techniques for financial data analysis?	2	CO5
2.	Illustrate the use of data mining in telecommunication industry?	2	CO5
3.	Interpret the usage of data mining in biological data analysis ?	5	CO5



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K.NAVEEN CHAKRAVARTHI Asst.Prof.

4	Justify the need of data mining in intrusion detection ?	5	CO5
5.	How to choose a data mining system? Explain with examples ?	2	CO5
6.	Classify the commercial data mining systems based on its efficiency?	4	CO5
7.	Explain the theoretical foundations of data mining?	2	CO5
8	Compare visual and audio data mining ?	4	CO5
9	Exemplify the data mining and collaborative filtering?	2	CO5
10	Outline the social impacts of data mining ?	2	CO5

DATA MINING

END QUESTION PAPERS (2019, 2020, 2021)

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 - I Semester –End Examinations (Regular) December-2019

R16CSE1122 – DATA WAREHOUSING AND DATA MINING

(Computer Science and Engineering)

Duration: 3 Hrs

09.12.2019

Max Marks: 70M

Section – A

Answer All the following questions

Marks: 5Qx4M = 20M

1. Write the differences between operational database systems and data warehouses.
2. Define each of the following data mining functionalities: characterization, discrimination, association and correlation analysis.
3. Explain the principles of Apriori Algorithm.
4. Describe the essential features of decision trees in the context of classification.
5. What is Clustering? What are different types of clustering?

Section – B

Answer any FIVE questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT – I

6. a) Define data warehouse and write the features of data warehouse
b) Draw the architecture of data warehouse and explain the three tiers in detail.

(OR)

7. a) List out the OLAP operations and explain the same with an example.
b) What are the various OLAP server architectures?

UNIT - II

8. a) What is data mining? Explain the steps in knowledge discovery process.
b) Explain data transformation techniques.

(OR)

9. a) What are the various measures of similarity and dissimilarity? Explain with suitable examples.
b) What are the various methods for generation of concept hierarchy for nominal data?

UNIT - III

10. Write FP-growth algorithm and explain how frequent item sets are generated from FP-tree.

(OR)

11. A database has four transactions. Let min_sup=60% and min_conf=80%

TID	date	items_bought
100	10/15/99	{K, A, B, D}
200	10/15/99	{D, A, C, E, B}
300	10/19/99	{C, A, B, E}
400	10/22/99	{B, A, D}

Find all frequent items using apriori & FP-growth, respectively. Compare the efficiency of the two mining processes.

UNIT – IV

12. a) Discuss the classification by decision tree induction.
b) Illustrate Bayesian belief networks in classification.

(OR)

P.T.O

13. What are the Bayesian classifiers? With an example, describe how to predict a class label using naive Bayesian classification.

UNIT-V

14. a) Given two objects represented by the tuples (22,1, 2,10) and (20, 0,36, 8):
i) Compute the *Euclidean distance* between the two objects.
ii) Compute the *Manhattan distance* between the two objects.
iii) Compute the *Minkowski distance* between the two objects, using $p = 3$.
b) Write PAM , k-medoids clustering algorithm.

(OR)

15. a) Explain the agglomerative Hierarchical clustering with an example
b) What is outlier detection? Explain with suitable example.

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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

III B.Tech - II Semester–End Examinations(Regular/Supply) November-2020

R16CSE1116 – DATAWAREHOUSING AND DATA MINING

(COMPUTER SCIENCE AND ENGINEERING)

Duration:2 Hrs

24.11.2020 (AN)

Max Marks:70M

Section – A

Answer Any Three of the following questions.

Marks: 3Qx6M =18M

1. Write the differences between operational database systems and data warehouses.
2. Define each of the following data mining functionalities: characterization, discrimination, association and correlation analysis.
3. Explain the principles of Apriori Algorithm.
4. Describe the essential features of decision trees in the context of classification.
5. What is Clustering? What are different types of clustering?

Section – B

Answer FOUR questions from the following

Marks: 4Qx13M = 52M

UNIT – I

6. a) Define data warehouse and write the features of data warehouse
b) Draw the architecture of data warehouse and explain the three tiers in detail.

(OR)

7. a) List out the OLAP operations and explain the same with an example.
b) What are the various OLAP server architectures?

UNIT - II

8. a) What is data mining? Explain the steps in knowledge discovery process.
b) Explain data transformation techniques.

(OR)

9. a) What are the various measures of similarity and dissimilarity? Explain with suitable examples.
b) What are the various methods for generation of concept hierarchy for nominal data?

UNIT - III

10. Write FP-growth algorithm and explain how frequent item sets are generated from FP-tree.

(OR)

11. A database has four transactions. Let min_sup=60% and min_conf=80%

TID	date	items_bought
100	10/15/99	{K, A, B, D}
200	10/15/99	{D, A, C, E, B}
300	10/19/99	{C, A, B, E}
400	10/22/99	{B, A, D}

Find all frequent items using apriori & FP-growth, respectively. Compare the efficiency of the two mining processes.

UNIT - IV

12. a) Discuss the classification by decision tree induction.
b) Illustrate Bayesian belief networks in classification.

(OR)

13. What are the Bayesian classifiers? With an example, describe how to predict a class label using naive Bayesian classification.

UNIT-V

14. a) Given two objects represented by the tuples (22,1, 2,10) and (20, 0,36, 8):
i) Compute the *Euclidean distance* between the two objects.
ii) Compute the *Manhattan distance* between the two objects.
iii) Compute the *Minkowski distance* between the two objects, using $p = 3$.
b) Write PAM , k-medoids clustering algorithm.

(OR)

15. a) Explain the agglomerative Hierarchical clustering with an example
b) What is outlier detection? Explain with suitable example.

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IV B.Tech - I Semester –End Examinations (Suppl.) October-2020

R14CSE1122 – DATAWAREHOUSING & DATAMINING

(Computer Science and Engineering)

Duration:2 Hrs

16.10.2020 (AN)

Max Marks:70M

Section – A

Answer Any Three of the following questions.

Marks: 3Qx6M =18M

1. List the major steps involved in the ETL process.
2. What are the motivating challenges in Data Mining technology?
3. Define Frequent sets, Confidence, Support and Association Rule.
4. Explain briefly the K-nearest neighbor classification.
5. Differentiate agglomerative and divisive hierarchical clustering.

Section – B

Answer FOUR questions from the following

Marks: 4Qx13M = 52M

UNIT – I

6. a) Describe the features of a data warehouse
b) Explain star-schema, snow-flake schema and fact constellation schema with suitable examples.
- (OR)
7. a) What is a data cube? What are the various measures used in data cube computation.
b) Describe the operations roll-up, drill-down, slice and the dice and pivot with the help of diagrams.

UNIT - II

8. What are the different data mining tasks? Elaborate each task with suitable example.
- (OR)
9. a) What is data preprocessing? What are the major tasks in data preprocessing?
b) Describe the different methods for data cleaning.

UNIT - III

10. Write FP-growth algorithm and explain how frequent item sets are generated from FP-tree.
- (OR)
11. a) What is association rule Mining problem?
b) Explain Apriori algorithm for finding frequent item sets with example.

UNIT - IV

12. Describe the general approach for building a classification model.
- (OR)

13. a) Explain the algorithm for constructing a decision tree.
b) Illustrate Bayesian belief networks in classification

UNIT-V

14. a) Explain K-means clustering algorithm
b) What are the additional issues related to K-means clustering algorithm.

(OR)

15. a) Write the basic Agglomerative Hierarchical Clustering algorithm
b) Discuss the key issues in Hierarchical Clustering.

MID -1 & MID-2 QUESTION PAPERS (2020)

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution Under 2(f) and 12(B) of UGC Act 1956, New Delhi)

D4

IV B.Tech - I Semester - II Mid Term Examinations

(R16CSE1122) DATA WAREHOUSING AND DATA MINING - (Computer Science & Engineering)
Duration: 90Mins **Date: 31.10.2019 FN** **Max Marks: 25M**

Section – A

Answer **All** the questions

Marks: 5Qx1M = 5M

1. Define Association Rule.
2. What is Item cost? And list the application of association analysis.
3. What is rule Classification?
4. Simplify the PAM algorithm.
5. List the advantages of Hierarchical methods.

Section – B

Answer any **FOUR** questions

Marks: 4Qx5M = 20M

6. What is Frequent Item Set Generation? Explain.
7. Illustrate the APRIORI algorithm.
8. Explain Decision tree induction algorithm for classifying data tuples and discuss suitable example.
9. Categorize the characteristics of K-nearest neighbor algorithm.
10. Summarize briefly various Clustering methods.
11. Categorize the different types of hierarchical methods and explain.

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
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D4

III B.Tech - II Semester - II Mid Term Examinations
(R16CSE1122) DATA WAREHOUSING AND DATA MINING

(COMPUTER SCIENCE AND ENGINEERING)

Duration: 90Mins

Date: 16.04.2019 AN

Max Marks: 25M

Section – A

Answer **All** the questions

Marks: 5Qx1M = 5M

1. What is Maximal frequent Item set?
2. List the types of classifier techniques.
3. Analyze the information gain.
4. What is Partitioning Clustering?
5. Distinguish between Agglomerative and Divisive clustering techniques.

Section – B

Answer any **FOUR** questions

Marks: 4Qx5M = 20M

6. Elaborate the compact representation of Frequent Item Data set.
7. How to evaluate the accuracy of Classifier?
8. Outline about Bayesian Belief Networks.
9. Simplify the KNN classification.
10. Categorize the different types of hierarchical methods and explain.
11. What are Outliers? Discuss the methods adopted for outlier detection.

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
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D4

IV B.Tech - I Semester - I Mid Term Examinations

(R16CSE1122) DATA WAREHOUSING AND DATA MINING - (Computer Science & Engineering)

Duration: 90Mins

Date: 27.08.2019 FN

Max Marks: 25M

Section – A

Answer All the questions

Marks: 5Qx1M = 5M

1. Identify the Star and Snowflake Schema.
2. What is mean by Multidimensional Data Model?
3. What is KDD?
4. Analyze the Data Cleaning.
5. Justify the market Basket analysis.

Section – B

Answer any FOUR questions

Marks: 4Qx5M = 20M

6. Distinguish between Operational database systems and Data warehousing.
7. Analyze the different schemas for multi dimensional databases.
8. Outline about Data Preprocessing.
9. Explain about Data transformation in data mining.
10. Simplify the Classification of Association rule mining.
11. Illustrate the APRIORI algorithm.

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
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D4

III B.Tech - II Semester - I Mid Term Examinations
(R16CSE1122) DATA WAREHOUSING AND DATA MINING

(COMPUTER SCIENCE AND ENGINEERING)

Duration: 90Mins

Date: 15.02.2019 AN

Max Marks: 25M

Section – A

Answer **All** the questions

Marks: 5Qx1M = 5M

1. Difference between OLAP and OLTP.
2. Define ROLAP.
3. Define Data mining.
4. What is KDD?
5. What is meant by market Basket analysis?

Section – B

Answer any **FOUR** questions

Marks: 4Qx5M = 20M

6. Differentiate operational database systems and data ware housing.
7. Explain with example the different schemas for multi dimensional databases.
8. Briefly discuss about data warehouse architecture.
9. Explain data mining as a step in the process of knowledge discovery.
10. Explain the major issues in data mining.
11. Define the terms frequent item sets, closed item sets and association rules.

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
III B.Tech - II Semester - I Mid Term Examinations, February - 2020
(R16CSE1122) DATA WAREHOUSING AND DATA MINING
(COMPUTER SCIENCE AND ENGINEERING)

D4

Duration: 90Mins

Dt: 04.02.2020 AN

Max Marks: 25M

Section – A

Answer All the questions

Marks: 5Qx1M = 5M

1. Define Data Warehouse.
2. What is a Data Mart?
3. Define Data mining.
4. List the Challenges of KDD.
5. Define Association Rule.

Section – B


Answer any FOUR questions

Marks: 4Qx5M = 20M

6. Explain in detail about Data Warehouse architecture with a neat sketch.
 7. Distinguish between Operational database systems and Data warehousing.
 8. What are the steps involved in KDD process ? Explain.
 9. Elaborate the Data Cleaning techniques with an example.
 10. Illustrate the APRIORI algorithm.
 11. Discuss the FP-Growth algorithm.
-

Cloud Computing

(R18CSE4143)

	SRI INDU COLLEGE OF ENGG & TECH LESSON PLAN (Regulation: R20) Department of CSE(AIML&CS,DS)			Prepared on Reg:20 Page: 57 of 113
	Sub. Code & Title	(R18CSE4143) CLOUD COMPUTING		
	Academic Year: 2022-23	Year/Sem./Section	III/I	
	Faculty Name & Designation	E.Pavithra/K.Mahesh Kumar Asst.professor		

LESSON PLAN

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

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								
I	Introduction to Software Engineering and A Generic View of process					12		
1.1	System Modeling, Clustering and Virtualization Introduction	T1	11	13	Black board	01		CO1/K4
1.2	Distributed System Models	T1	14	16	Black board	01		CO1/K2
1.3	Enabling Technologies like Distributed Computing and Parallel Computing Grid Computing and Cloud Computing	T1	18	19	Black board	01		CO1/K1
1.5	Computer Clusters for Scalable Parallel Computing	T1	21	22	Black board	01		CO1/K2
1.6	Introduction of Hypervisor software	T1	24	25	Black board	01		CO1/K2
1.7	Details of Virtual Machines	T1	27	29	Black board	01		CO1/K2
1.8	Virtualization of Clusters and Data centers.	T2	30	31	Black board	01		CO1/K1
			from	To				
UNIT –II								

II	Foundations					09		
2.1	Introduction to Cloud Computing	T1	78	79	Black board	01		CO2/K4
2.2	Migration into Cloud	T1	81	83	Black board	01		CO2/K5
2.3	Enriching the 'Integration as a Service' Paradigm for the Cloud Era	T2	85	87	Blackboard	01		CO2/K1
2.4	The Enterprise Cloud Computing Paradigm	T1	91	93	Presentatio n	01		CO2/K6
2.5	Detailed about IAAS	T1	95	97	Presentatio n	02		CO2/K2
UNIT- III								
III	Infrastructure as a Service(IAAS)&Platform and Software as a Service(PASS/SAAS					11		CO3/K4
3.1	IAAS, PAAS, SAAS Introduction	W2	110	118	Presentatio n	01		CO3/K2
3.2	Virtual machines provisioning and Migration services	T1	119	121	Presentatio n	01		CO3/K2
3.3	On the Management of Virtual machines for Cloud Infrastructure	T1	122	124	Black board	01		CO3/K2
3.4	Enhancing Cloud Computing Environments using a Cluster as a Service.	W3	125	128	Presentatio n	01		CO3/K6
3.5	Secure Distributed Data Storage in Cloud Computing	T1	129	131	Black board	01		CO3/K4
3.6	Aneka Introduction and their Architecture Explanation		132	133	Black board	01		CO3/K2
3.7	Comet Cloud Architecture	T1	135	137	Black board	01		CO3/K4
3.8	T-Systems Explanation	W4			Presentatio n	01		CO3/K3

3.9	Workflow Engine for Clouds	T1	138	140	Black board	01		CO3/K3
3.10	Understanding Scientific Applications for Cloud Environments	T1	148	150	Black board	01		CO3/K2
UNIT-IV								
IV	Monitoring, Management and Applications					14		
4.1	Introduction to Monitoring , Management Application	T1	158	160	Black board	01		CO4/K2
4.2	An Architecture for Federated Cloud Computing	W5	175	189	Presentatio n	01		CO4/K4
4.3	SLA Management in Cloud Computing	T1	200	201	Black board	01		CO4/K6
4.4	Performance Prediction for HPC on Clouds	T1	206	210	Black board	02		CO4/K2
4.5	Best Practices in Architecting Cloud Applications in the AWS cloud	T1	215	220	Presentatio n	02		CO4/K2
4.7	Building Content Delivery networks using Clouds	T1	225	230	Presentatio n	02		CO4/K2
UNIT-V								
V	Governance and Case Studies:					11		
5.1	Governance and Case Studies Introduction	T1	737	741	Presentatio n	01		CO4/K2
5.2	Organizational Readiness and Change management in the cloud Age	T1	737	741	Presentatio n	01		CO4/K2
5.3	Data Security in the Cloud	T1	743	790	Black board	01		CO4/K2

5.4	Legal Issues in cloud computing	T1	743	790	Black board	01		CO4/K1	
5.5	Achieving Production Readiness for Cloud service	T1	743	790	Black board	01		CO4/K2	
	Review	Signature of the HOD/Coordinator							

TEXT BOOKS

Cloud Computing: Principles and Paradigms by Rajkumar Buyya, James Broberg and Andrzej M. Goscinski, Wiley, 2011. 2) Distributed and Cloud Computing, Kai Hwang, Geoffery C.Fox, Jack J.Dongarra, Elsevier, 2012.

REFERENCE BOOKS

1) Cloud Computing : A Practical Approach, Anthony T.Velte, Toby J.Velte, Robert Elsenpeter, Tata McGraw Hill, rp2011. 2) Enterprise Cloud Computing, Gautam Shroff, Cambridge University Press, 2010. 3) Cloud Computing: Implementation, Management and Security, John W. Rittinghouse, James F.Ransome, CRC Press, rp2012. 4) Cloud Application Architectures: Building Applications and Infrastructure in the Cloud, George Reese, O'Reilly, SPD, rp2011. 5) Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance, Tim Mather,Subra Kumaraswamy, Shahed Latif, O'Reilly, SPD, rp2011.

OUTCOMES :

Ability to understand the virtualization and cloud computing concepts.

WEBSITES:

https://www.iare.ac.in/sites/default/files/lecture_notes/CC%20LECTURE%20NOTES.pdf



SRI INDU COLLEGE OF ENGG & TECH
MODEL QUESTION PAPER-I
(Regulation :R18)
Department of CSE

(Regulation :R18)
 Prepared on
 Rev1:

Sub. Code & Title	(R18CSE4143)Cloud Computing		
Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Mrs E Pavithra,Ms.K Mahesh, Asst Professor		

UNIT-1

1 MARKS QUESTIONS		BT Level
1	What is clustering ?(Remembering)	1
2	Identify the virtualization software?(Understanding)	1
3	State the distributed computing?(Remembering)	1
4	Write about the hypervisor?(Creating)	1
5	Define data center?(Remembering)	1
6	Judge the concept of scalability?(Applying)	4
7	Explain about virtual machines	2
8	What are the advantages of cluster computing?	1
9	What is parallel computing?	
10	Write about the virtual data centers.	1

QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

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

UNIT-1			
10 MARKS QUESTIONS		BT Level	Course Outcome
1	Define the Virtualization and explain about virtual machines and virtualization architecture?(Remembering)	1	CO1
2	Identify the Systems Models for Distributed and Cloud Computing?(Remembering)	1	CO1,CO4
3	Explain the Design Objectives of Computer Clusters?(Understanding)	1	CO1.CO3
4	Explicate levels of virtualization implementation?(Applying)	1	CO3,CO6
5	Define parallel computing. What is the importance of computer clusters in parallel computing?	1	CO2
6	a) Explain the Virtualization of Cluster? b) Describe the Data Model for Virtual Machine?	4	CO1
7	Write a short note on Performance Metrics and Scalability Analysis of Distributed systems.	2	CO1
8	Explain the role of Fault Tolerance and System Availability in Distributed Computing System.	1	CO4
9	Explain in detail about Data Center Virtualization?		
10	Write different types of parallel computing explain in detail?	1	CO1



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Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Mrs E Pavithra,Ms.K Mahesh, Asst Professor		

UNIT-II

1 MARKS QUESTIONS

	BT Level	Course Outcome
1	1	CO4
2	1	CO4
3	1	CO4
4	1	CO1
5	1	CO1
6	1	CO4
7	1	CO1
8	1	CO4
9	1	CO4
10	1	CO1

10 MARKS QUESTIONS

1	2	CO1
2	5	CO4
3	5	CO4
4	1	CO4
5	1	CO4
6	2	CO6
7	4	CO1
8	1	CO4
9	4	CO1
10	2	CO4



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Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Mrs E Pavithra,Ms.K Mahesh, Asst Professor		

UNIT-III

1 MARKS QUESTIONS

		BT Level	Course Outcome
1	List the different services in cloud?(Remembering)?	1	CO5
2	Define Aneka?	1	CO1
3	What is virtual machine provisioning?	1	CO5
4	Why migrate VMs?	2	CO5
5	Write Short notes on IAAS,PASS,SASS?	1	CO5
6	What is Microsoft Azure Services platform?	1	CO5
7	List the different level of migration?	1	CO5
8	Explain the T-Systems?	1	CO6
9	Define Comet Cloud?	1	CO6
10	Write about Workflow Engine?	1	CO3

10 MARKS QUESTIONS

1	Describe the basic component of an IaaS-based solution for cloud computing?	2	CO5
2	Explain about virtual machine provisioning and Migration Services?	2	CO3
3	What fundamental advantages does cloud computing technology bring to scientific application?	2	CO6
4	Provide some example of IaaS implementation?	4	CO1
5	What are the main characteristics of platform-as-a-Service Solution?	2	CO3
6	Describe the major features of the Aneka Application model?	6	CO1
7	Explain Distributed Data Storage in Cloud Computing?	2	CO5
8	Enhancing Cloud Computing Environment using a Cluster as a Service?	4	CO5
9	Difference between IAAS PAAS SAAS?	2	CO5
10	Illuminate on Aneka Hybrid Cloud Architecture?	2	CO5



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Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Mrs E Pavithra,Ms.K Mahesh, Asst Professor		

UNIT-IV			
1 MARKS QUESTIONS		BT Level	Course Outcome
1	What is cloud monitoring and management?	1	CO6
2	Define the SLA?(Remembering)	4	CO6
3	Outline the main services that are offered by AWS.	1	CO6
4	State the HPC?(Remembering)	2	CO6
5	Explain the compute services offered by AppEngine.	5	CO6
6	Give the various services of cloud federation	4	CO6
7	Describe the architecture of cloud federation stack	1	CO6
8	List the Business Benefits of cloud computing?(Remembering)	1	CO6
9	Argue the SAP systems?(Evaluating)	1	CO6
10	Define Cloud mashups?(Remembering)	1	CO6
10 MARKS QUESTIONS			
1	Formulate an architecture for federated cloud computing? (Creating)	2	CO6
2	Explain briefly SLA management in cloud? (Understanding)	5	CO6
3	(a) Write short notes on AmazonS3. (b) Write and explain about the MetaCDN architecture and performance.	2	CO6
4	a)Identify the Types of SLA? b)Explain about Life Cycle of SLA?	2	CO6
5	Discuss about Load Balancing with Architecture ?	6	CO6
6	Discriminate HPC Systems and HPC on Clouds and their performance comparison? (Analyzing)	6	CO6
7	Recognize the Amazon web Services Cloud? (Understanding)	2	CO6
8	Demonstrate the best practices in architecting cloud applications in the AWS cloud? (Understanding)	2	CO6
9	Write the resource cloud mashups? (Applying)	1	CO6
10	Briefly Explanation on Cloud Best Practice? (A)Decouple your components (B)Implement Elasticity (C)Security(Understanding)	2	CO6
UNIT-IV			



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Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Mrs E Pavithra, Ms.K Mahesh, Asst Professor		

UNIT-V			
1 MARKS QUESTIONS		BT Level	Course Outcome
1	Discuss about basic concepts of organizational readiness	1	CO6
2	What is an Information Card?	1	CO6
3	Write a short note on the current state of the Data Security in the Cloud.	1	CO6
4	What is CMMM?	1	CO6
5	Define Cloud age?	1	CO6
6	Describe OECD?	4	CO6
7	Explain the Types of CCMM?	1	CO6
8	What is Data Security Risk?	1	CO6
9	Define Digital Information?	1	CO6
10	Write a short note Production Readiness?	1	CO6
10 MARKS QUESTIONS			
1	Write basic Concept of Organizational Redlines?	2	CO6
2	(a) Describe briefly Governance as service with some examples. (b) What is Open Nebula Cloud? Explain the main components of Open Nebula.	2	CO6
3	a) Explain Common change management models? b) Explain the cloud, Digital Identity and Data Security?	2	CO6
4	(a) Describe the Legal Issues in Cloud Computing?	2	CO6
5	a) Explain briefly the framework to comprehend the competitive environment in Cloud Computing. b) Write a short note on Change Management Maturity Model (CMMM).	6	CO6
6	Examining the Achieving Production Readiness for Cloud Services?	6	CO6
7	Describe the Data Security Risks in Cloud Computing?	2	CO6
8	Explain Cloud Services Life Cycle with Appropriate sketch?	2	CO6
9	What are the five factors to be incorporated in competitive environment ?Explain	1	CO6
10	Describe the Key Assessments to ensure readiness of a service for operations?	2	CO6
UNIT-V			

BR-16

HallTicket No.: _____

D4

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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

III B.Tech - II Semester –End Examinations (Suppl.) November-2019

R16CSE1125 – CLOUD COMPUTING

(Information Technology)

Duration: 3 Hrs

21.11.2019

Max Marks: 70M

Section – A

Answer ALL the following questions

Marks: 5Qx4M = 20M

1. What are the advantages of cluster computing?
2. Explain different services provided by cloud..
3. What are the different types of services available in Aneka? Explain.
4. Explain the life cycle of SLA.
5. Discuss about basic concepts of organizational readiness.

Section – B

Answer any FIVE questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT – I

6. (a). Describe the role of Hypervisor in Hardware virtualization.
(b). Explain the features provided by virtual infrastructure manager.

(OR)

7. (a). Define parallel computing. What is the importance of computer clusters in parallel computing?
(b). Discuss the characteristics of virtualization.

UNIT - II

8. (a) Discuss the desired features of a cloud.
(b) Describe the interactive seven-step model of migration into the cloud.

(OR)

9. (a) Describe different types of clouds based on deployment models.
(b) Explain briefly about three types for cloud integration.

UNIT - III

10. (a) What are the states in virtual machine life cycle? Explain.
(b) “The Quality and Security is important in Cloud”. Justify the statement.

(OR)

4. (a) Describe cluster as a service with neat sketch.
- (b) What are the few perspectives of data security in cloud computing?

UNIT – IV

5. (a) What are the key components of SLA? Describe briefly.
- (b) Explain the practices used to build an application in cloud.

(OR)

6. (a). What are the features of federation types?
- (b) Describe the concepts of a cloud mashup.

P.T.O

UNIT-V

7. (a) Describe the data security risks in cloud computing.
- (b) Explain cloud service life cycle with appropriate sketch.

(OR)

8. (a) What are the five factors to be incorporated in competitive environment? Explain.
- (b) Describe the key assessments to ensure readiness of a service for operation.

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 - I Semester –End Examinations (Regular) December-2019

R16CSE1125 – CLOUD COMPUTING

(Computer Science and Engineering)

Duration: 3 Hrs

11.12.2019

Max Marks: 70M

Section – A

Answer All the following questions

Marks: 5Qx4M = 20M

1. Draw a neat graph for hype cycle for emerging technologies.
2. What is Cloud- based Enterprise Mashup Integration Services for B2B Scenarios?
3. What is Platform as Service? What are the functional differences between PaaS & traditional development platforms?
4. Write the Differences Between “Classical” HPC and HPC in Cloud Environments.
5. What is an Information Card? Explain.

Section – B

Answer any FIVE questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT – I

6. (a) Explain the design issues of computer clustering for Massive Parallelism.
(b) Explain about the Cluster Job Scheduling Methods.
(OR)
7. (a) Explain in detail about System Models for Distributed and Cloud Computing.
(b) Explain about the Energy Efficiency in Distributed Computing.

UNIT - II

8. (a) Explain various features in virtual infrastructure manager.
(b) List some challenges in cloud computing.

(OR)

9. (a) Explain about SAAS Integration Services.
(b) What is Boomi Software and Bluewolf..

UNIT - III

10. (a) Draw and explain about Microsoft Windows Azure.
(b) Draw and explain the Architecture of Workflow Management Systems

(OR)

11. (a) Write in detail about RVWS Design.

(b) Explain Different Technologies For Data Security In Cloud Computing.

UNIT – IV

12. (a) Write the Basic Principles of Cloud Computing.
(b) Discuss about the Traditional Approaches to SLA Management

(OR)

13. (a) Write short notes on AmazonS3.
(b) Write and explain about the MetaCDN architecture and performance.

UNIT-V

14. (a) Write Pros and Cons for content Level Security.
(b) Explain about data privacy and security issues in cloud environment.

(OR)

15. (a) Describe briefly Governance as service with some examples.
(b) What is Open Nebula Cloud? Explain the main components of Open Nebula.

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 - I Semester –End Examinations (Suppl.) October-2020**R14CSE1125 – CLOUD COMPUTING**

(Computer Science and Engineering)

Duration:2 Hrs**19.10.2020 (AN)****Max Marks:70M****Section – A****Answer Any Three of the following questions.****Marks: 3Qx6M =18M**

1. What is parallel computing?
2. Write a short note on desired features of a Cloud.
3. Explain Virtual Machine life cycle with a neat diagram.
4. Explain HPC Systems and HPC on Clouds and their performance comparison?
5. Write a short note on the current state of the Data Security in the Cloud.

Section – B**Answer FOUR questions from the following****Marks: 4Qx13M = 52M****UNIT – I**

6. Explain the Distributed System Models.

(OR)

7. a) Write a short note on Performance Metrics and Scalability Analysis of Distributed systems
b) Explain the role of Fault Tolerance and System Availability in Distributed Computing System

UNIT - II

8. a) Give an overview of enterprise cloud computing paradigm .
b) Explain the seven-step model of migration into a cloud.

(OR)

9. a) Explain types of clouds based on deployment models and desired features of cloud?
b) Describe the Seven step model of migration into a cloud?

UNIT - III

10. a) Explain the Virtual Machine(VM) provisioning process.
b) Describe the life cycle of a VM within OpenNebula

(OR)

11. a) Explain Comet-Cloud Architecture with a neat diagram.
b) Write a short note on importance of Quality and Security in Cloud.

UNIT - IV

12. a) Explain a model for federal cloud computing.
b) Explain the best practices to build an application on cloud.

(OR)

13. a) Write a short note on Traditional Approach to SLA Management.

b) Write a short note on the need for Cloud Mashups and various concepts of Cloud Mashups

UNIT-V

14. a) Explain briefly the framework to comprehend the competitive environment in Cloud Computing.

b) Write a short note on Change Management Maturity Model (CMMM).

(OR)

15. a) Explain Common change management models?

b) Explain the cloud, Digital Identity and Data Security?

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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

III B.Tech - II Semester –End Examinations(Regular/Suppl.) November-2020**R16CSE1125 – CLOUD COMPUTING**

(Information Technology)

Duration: 2 Hrs

12.11.2020(AN)

Max Marks: 70M

Section – A

Answer any ***THREE*** the following questions

Marks: 3Qx6M = 18M

1. What are the advantages of cluster computing?
2. Explain different services provided by cloud..
3. What are the different types of services available in Aneka? Explain.
4. Explain the life cycle of SLA.
5. Discuss about basic concepts of organizational readiness.

Section – B

Answer ***FOUR*** from the following

Marks: 4Qx13M = 52M

UNIT – I

6. (a). Describe the role of Hypervisor in Hardware virtualization.
(b). Explain the features provided by virtual infrastructure manager.

(OR)

7. (a). Define parallel computing. What is the importance of computer clusters in parallel computing?
(b). Discuss the characteristics of virtualization.

UNIT - II

8. (a) Discuss the desired features of a cloud.
(b) Describe the interactive seven-step model of migration into the cloud.

(OR)

9. (a) Describe different types of clouds based on deployment models.
(b) Explain briefly about three types for cloud integration.

UNIT - III

10. (a) What are the states in virtual machine life cycle? Explain.
(b) “The Quality and Security is important in Cloud”. Justify the statement.

(OR)

11. (a) Describe cluster as a service with neat sketch.
(b) What are the few perspectives of data security in cloud computing?

UNIT – IV

12. (a) What are the key components of SLA? Describe briefly.
(b) Explain the practices used to build an application in cloud.

(OR)

Section – A

Answer All the questions

Marks: 5x1 = 5M

1. Define hypervisor.
2. Define data center.
3. What is migrating?
4. Define Integration.
5. What is meant IAAS?

Section – B

Answer any FOUR questions

Marks: 4x5 = 20M

6. Explain the Design Objectives of Computer Clusters.
7. Illuminate node architecture and packaging.
8. Describe Design principles of computer clusters.
9. What is a Cloud Computing and explain different types of Clouds?
10. Describe the Seven step model of migration into a cloud.
11. Describe the Virtual Machines Provisioning and Manageability.

R-14

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution Under 2(f) and 12(B) of UGC Act 1956, New Delhi)

D4

IV B.Tech - I Semester - I Mid Term Examinations

(R14CSE1125) CLOUD COMPUTING

(Computer Science & Engineering)

Duration: 90Mins

Date: 31.08.2017

Max Marks: 25M

Section – A

Answer All the questions

Marks: 5x1 = 5M

1. Define hypervisor.
2. Define data center.
3. What is migrating?
4. Define Integration.
5. What is meant IAAS?

Section – B

Answer any FOUR questions

Marks: 4x5 = 20M

6. Explain the Design Objectives of Computer Clusters.
7. Illustrate node architecture and packaging.
8. Describe Design principles of computer clusters.
9. What is a Cloud Computing and explain different types of Clouds?
10. Describe the Seven step model of migration into a cloud.
11. Describe the Virtual Machines Provisioning and Manageability.

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
III B.Tech - II Semester - I Mid Term Examinations, February - 2020
(R16CSE1125)- CLOUD COMPUTING (Information Technology)

D4

Duration: 90Mins

Dt: 03.02.2020 FN

Max Marks: 25M

Section – A

Answer ALL the questions

Marks: 5Qx1M = 5M

1. State the distributed computing.
2. Write about the hypervisor.
3. State the APIs.
4. Recall the CRM.
5. State the cloud hosting.

Section – B

Answer any FOUR questions

Marks: 4Qx5M = 20M

6. Memorize the cloud computing and explain cloud computing over the internet.
7. Explicate levels of virtualization implementation.
8. Explain the Integration Methodologies.
9. Describe Enterprise Cloud adoption strategies using fundamental cloud drivers.
10. Examine Distributed Management of Virtual Infrastructure.
11. Demonstrate Virtual Machine Migration Services.

BR-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
III B.Tech - II Semester - I Mid Term Examinations, February - 2020
(R16CSE1125)- CLOUD COMPUTING (Information Technology)

D4

Duration: 90Mins

Dt: 03.02.2020 FN

Max Marks: 25M

Section – A

Answer All the questions

Marks: 5Qx1M = 5M

1. State the distributed computing.
2. Write about the hypervisor.
3. State the APIs.
4. Recall the CRM.
5. State the cloud hosting.

Section – B

Answer any FOUR questions

Marks: 4Qx5M = 20M

6. Memorize the cloud computing and explain cloud computing over the internet.
7. Explicate levels of virtualization implementation.
8. Explain the Integration Methodologies.
9. Describe Enterprise Cloud adoption strategies using fundamental cloud drivers.
10. Examine Distributed Management of Virtual Infrastructure.
11. Demonstrate Virtual Machine Migration Services.

R-16

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
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D4

IV B.Tech - I Semester - II Mid Term Examinations
(R16CSE1125) CLOUD COMPUTING

(Computer Science & Engineering)

Duration: 90Mins

Date: 31.10.2019 AN

Max Marks: 25M

Section – A

Answer All the questions

Marks: 5Qx1M = 5M

1. Write about the virtual data centers.
2. Define Cloud mashups
3. Identify basic principles of cloud computing.
4. Classify the Deming Cycle.
5. What is an Information Card?

Section – B

Answer any FOUR questions

Marks: 4Qx5M = 20M

6. Explain the Aneka Cloud Platform.
7. Explain briefly SLA management in cloud.
8. Write the resource cloud mashups.
9. Appraise Common change management models.
10. Explain the cloud, Digital Identity and Data Security.
11. Illustrate on Change Management Maturity Model (CMMM).

12. (a). What are the features of federation types?
(b) Describe the concepts of a cloud mashup.

UNIT-V

- 13.(a) Describe the data security risks in cloud computing.
(b) Explain cloud service life cycle with appropriate sketch.

(OR)

- 14.(a) What are the five factors to be incorporated in competitive environment? Explain.
(b) Describe the key assessments to ensure readiness of a service for operation.

P.T.O

Assignment Questions

Assignment — Mid – I

1. Explain software life cycle?
2. Explain about Capability Maturity Model Integration.
3. Give the differentiate between functional and non-functional requirements.
4. Explain in detail water fall model?
5. Explain design concepts in detail.?

Assignment — Mid – II

1. What are the commonly used architectural styles ? Explain any one of them in detail.
2. Describe various types of testing's .
3. Discuss the MOOD metric suit .
4. Discus about Reactive vs Proactive Risk strategies

Write short notes on a) Quality b) Quality control

Internet of Things

(R18CSE4152)

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

Professional Elective -V (R18CSE4152) Internet of Things

Course Objectives:

- To introduce the terminology, technology and its applications
- To introduce the concept of M2M (machine to machine) with necessary protocols
- To introduce the Python Scripting Language which is used in many IoT devices
- To introduce the Raspberry PI platform, that is widely used in IoT applications
- To introduce the implementation of web based services on IoT devices

Unit – I : Introduction to Internet of Things –Definition and Characteristics of IoT, Physical Design of IoT – IoT Protocols, IoT communication models, Iot Communication APIs IoT enabled Technologies – Wireless Sensor Networks, Cloud Computing, Big data analytics, Communication protocols, Embedded Systems, IoT Levels and Templates Domain Specific IoTs – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle

Unit – II : IoT and M2M – Software defined networks, network function virtualization, difference between SDN and NFV for IoT Basics of IoT System Management with NETCOZF, YANG-NETCONF, YANG, SNMP NETOPEER

Unit – III : Introduction to Python – Language features of Python, Data types, data structures, Control of flow, functions, modules, packaging, file handling, data/time operations, classes, Exception handling Python packages – JSON, XML, HTTPLib, URLLib, SMTPLib

Unit – IV : IoT Physical Devices and Endpoints – Introduction to Raspberry PI-Interfaces (serial, SPI, I2C) Programming – Python program with Raspberry PI with focus of interfacing external gadgets, controlling output, reading input from pins.

Unit – V : IoT Physical Servers and Cloud Offerings – Introduction to Cloud Storage models and communication APIs Webserver – Web server for IoT, Cloud for IoT, Python web application framework Designing a RESTful web API


TEXT BOOKS:

- Internet of Things – A Hands-on Approach, Arshdeep Bahga and Vijay Madiseti, Universities Press, 2015, ISBN: 9788173719547
- Getting Started with Raspberry Pi, Matt Richardson & Shawn Wallace, O'Reilly (SPD), 2014, ISBN: 9789350239759

OUTCOMES

Upon completion of this course, the students should be able to:

- Analyze various protocols for IoT
- Develop web services to access/control IoT devices.
- Design a portable IoT using Raspberry Pi
- Deploy an IoT application and connect to the cloud.
- Analyze applications of IoT in real time scenario

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	Faculty Name & Designation	K.Sandhya(Asst.Prof)	

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Proposed Date of Handling	CO/RBT
			From	To				
UNIT – I								
I	Introduction to Internet of Things					19		
1.1	Introduction to Internet of Things	T1	1.1	1.1	Black board	2	1/9/22 7/9/22	CO1/L1
1.2	IoT Protocols.	T1	1.1.1	1.1.3	Black board	1	8/9/22	CO1/L1
1.3	IoT communication models	T1	1.2	1.2	Black board	2	9/9/22 13/9/21	CO2/L2
1.5	Iot Communication APIs IoT enabled Technologies	T1	1.2.2	1.2.2	Black board	2	14/9/22	CO2/L2
1.6	Wireless Sensor Networks	T1	1.2.2	1.2.2	Black board	1	15/9/22	CO3/L3
1.7	Cloud Computing	T1	1.5	1.5	Black board	1	15/9/22	CO3/L3
1.8	Big data analytics	T1	2.3	2.3	Black board	1	16/9/22 17/9/22	CO3/L3
1.9	Communication protocols	T1	2.3.2	2.5	Black board	1	18/9/22 20/9/22	CO3/L3
1.10	Embedded Systems.	T1	2.6	2.8	Black board	1	21/9/22	CO4/L4
1.11	IoT Levels and Templates Domain Specific IoT s	T1	8.1	8.2	Black board	2	22/9/22	CO2/L2
1.12	Home, City, Environment, Energy	T1	8.3.1	8.3.2	Black board	2	23/9/22	CO2/L2
1.13	Retail, Logistics, Agriculture	T1	8.3.1	8.3.2	Black board	1		CO2/L2
1.14	Industry, health and Lifestyle	T1	8.3.1	8.3.2	Black board	2		CO2/L2
	Review	Signature of the HOD/Coordinator						



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LESSON PLAN

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Faculty Name & Designation	K.Sandhya(Asst.Prof)		

Unit/ Item No.	Topic (s)	Book Reference	Page (s)		Teaching Methodology	Proposed No. of Periods	Proposed Date of Handling	CO/RBT
			From	To				
UNIT –II								
II	IoT and M2M					10		
2.1	IoT and M2M	T1	9.1	9.2	Black board	1		CO2/L 2
2.2	Software defined networks	T1	10.1	10.2	Black board	2		CO2/L 2
2.3	Network function virtualization	T1	10.3	3.48	Black board	1		CO4/L 4
2.4	Difference between SDN and NFV for IoT Basics of IoT System Management with NETCOZF	T1	10.5	10.6	Black board	2		CO4/L 4
2.5	YANG- NETCONF	T1	11.3	11.3.2	Black board	1		CO1/ L1
2.6	NETCONF	T1	11.4	11.4.4	Black board	1		CO1/ L1
2.7	YANG	T1	12.1	12.1.1	Black board	1		CO1/ L1
2.8	SNMP NETOPEER	T1	12.1	12.1.2	Black board	1		CO1/ L1
	Review	Signature of the HOD/Coordinator						



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K.Sandhya(Asst.Prof)

UNIT- III

III	Network Layer					12		CO	
3.1	Introduction to Python	T1	18.4	18.4.5	Black board	1		CO1/L1	
3.2	Language features of Python.	T1	19.1	19.1.2	Black board	1		CO2/L2	
3.3	Data types	T1	19.1	19.1.4	Black board	1		CO2/L2	
3.4	Data structures.	T1	19.3.1	19.3.4	Black board	1		CO3/L3	
3.5	Control of flow	T1	19.2	19.2.3	Black board	1		CO3/L3	
3.6	Functions	T1	21.5	21.5.3	Black board	1		CO3/L3	
3.7	Modules.	T1	22.1	22.3	Black board	1		CO3/L3	
3.8.	Packaging, file handling	T1	22.2	22.2	Black board	1		CO1/L1	
3.9	Data/time operations, classes	T1	22.3	22.3	Black board	1		CO1/L1	
3.10	Exception handling Python packages – JSON, XML,	T1	22.4	22.4	Black board	2		CO4/L4	
3.11	HTTPLib, URLLib, SMTPLib	T1	22.4	22.4	Black board	1		CO4	
Review		Signature of the HOD/Coordinator							



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UNIT-IV

CO

IV	IoT Physical Devices and Endpoints					12		
4.1	IoT Physical Devices and Endpoints	T1	6.1	6.5	Black board	2		CO2/L2
4.2	Introduction to Raspberry PI	T1	6.11	6.14	Black board	1		CO3/L3
4.3	Interfaces (serial, SPI, I2C) Programming	T1	6.30	6.58	Black board	1		CO4/L4
4.4	Python program with Raspberry PI with focus of interfacing external gadgets	T1	6.27	6.70	Black board	2		CO4/L4
4.5	Controlling output	T1	24.3.9	24.3.10	Black board	1		CO1/L1
4.7	Reading input from pins	T1	30.3	30.3.5	Black board	1		CO1/L1
4.8	Programming	T1	30.4	30.4.3	Black board	2		CO1/L1
	Review	Signature of the HOD/Coordinator						

UNIT-V

V	IoT Physical Servers and Cloud Offerings					10		
5.1	IoT Physical Servers and Cloud Offerings	T1	26.6	26.6.1	Black board	01		CO1/L1
5.2	Introduction to Cloud Storage models and communication APIs Webservice	T1	26.6.2	26.6.3	Black board	01		CO2/L2
5.3	Web server for IoT	T1	26.3	26.3.3	Black board	01		CO3
5.4	Cloud for IoT	T1	26.2	26.2.4	Black board	02		CO4
5.5	Python web application framework Designing a Restful web API	T1	26.1	26.1.2	Black board	02		CO1/L1
	Review	Signature of the HOD/Coordinator						

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LIST OF TEXT BOOKS AND REFERENCES

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- Internet of Things – A Hands-on Approach, Arshdeep Bahga and Vijay Madisetti, Universities Press, 2015,ISBN: 9788173719547
- Getting Started with Raspberry Pi, Matt Richardson & Shawn Wallace, O'Reilly (SPD), 2014,ISBN: 9789350239759



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QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

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

UNIT-I

UNIT-1 : Introduction to Internet of Things

UNIT-1 : Introduction to Internet of Things			
1MARK QUESTIONS		BT Level	Course Outcome
1.	Define an Internet of Things?	1	CO1
2.	List any four characteristics of IoT.?	1	CO1
3.	State the importance of IoT?	1	CO1
4.	What is the Thing in IoT?	2	CO2
5.	Write the any three functions of IoT?	2	CO2
6.	What are design factors IoT?	2	CO2
7.	What are the interfaces of WSN?	1	CO1
8.	Define link layer protocols in IoT	1	CO1
9.	State any four domain specific IoT applications?	1	CO1
10.	Describe various Communication Modules of IOT?	2	CO2
5 MARKS QUESTIONS			
1.	Discuss the characteristic of IoT and explain.	2	CO1
2.	What are applications of IoT and explain?	1	CO5
3.	Demonstrate the physical design of IoT with Things of IoT and protocols of IoT.	1	CO1
4.	Write the logical design of IoT with communication models	1	CO2
5.	Explain the IoT communication APIs and its importance	2	CO3
6.	Illustrate the IoT level 1 with diagram	5	CO2
7.	Discuss about any three IoT enabling technologies	2	CO1
8.	Differentiate the IoT level 2 and level 4 in detailed What are the major Data Structures of Compilation? Explain in detail?	2	CO2
9.	Explain the IoT level 3 and level 5 with diagrams	3	CO3
10.	Define the various domain specific of IoT and explain with home automation.	2	CO4



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Unit -II : IoT and M2M

1 MARK QUESTIONS

1.	Write a short note on M2M?	2	CO1
2.	Give the purpose of communication protocols used in M2M?	2	CO4
3.	State Software Defined Networking?	1	CO4
4.	Discuss the purpose of Conventional Networks?	1	CO4
5.	List the advantages of SDN?	2	CO4
6.	What is Network Function Virtualization?	2	CO4
7.	State the differences and similarities between IoT and M2M?	1	CO4
8.	How do data collection and analysis approaches differ in M2M and IoT?	1	CO4
9.	Differentiate between configuration and state data?	2	CO2
10.	What is the function of a data model manager?	2	CO2

5 MARKS QUESTIONS

1.	Differentiate between IoT and M2M.	1	CO4
2.	Explain the limitations of conventional network architectures.	2	CO4
3.	Discuss about the key elements of SDN	2	CO1
4.	Describe how SDN can be used for various levels of IoT.	1	CO2
5.	What is the function of a centralized network controller in SDN	2	CO3
6.	Define network function virtualization and explain with neat diagram	2	CO3
7.	Discuss about network function virtualization with example	2	CO3
8.	Describe the IoT system management in detailed	1	CO1
9.	What is the role of IoT NETCONF-YANG management?	1	CO1
10.	Discuss about the IoT NETCONF-YANG with components.	1	CO1



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Unit – III : Introduction to Python

1 MARK QUESTIONS

1.	Define node.	2	CO2
2.	What is gateway?	1	CO3
3.	State node structure used in IoT.	1	CO3
4.	List out various IoT devices used in reference model?	2	CO3
5.	What is state of art?	2	CO3
6.	Define package?	2	CO3
7.	Differentiate procedure oriented programming and object-oriented programming?	2	CO3
8.	What is the use of keyword argument in Python?	2	CO3
9.	Illustrate the IoT data types and data structures with example?	1	CO3
10.	Explain working with lists in Python?	2	CO3

5 MARKS QUESTIONS

1.	Explain the architecture reference model IoT?	1	CO3
2.	Demonstrate the IoT architecture with diagram and explain	2	CO3
3.	Describe the working of modules in Python. What is difference between Semantic and Syntax analysis?	2	CO5
4.	Illustrate the IoT data types and data structures with example.	1	CO3
5.	Explain about i) control flow ii) packages iii) file handling of IoT. ?	2	CO12
6.	What type of Architecture reference model is used for IoT and explain	2	CO12
7.	.Discuss about IoT reference model with diagram. ?	1	CO3
8.	What is State of the art introduction of IoT architecture?	2	CO3
9.	Explain about various stages of IoT with neat diagram. ?	5	CO5
10.	What is the importance of IoT architecture and explain?	2	CO3



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K.SANDHYA(Asst.Prof)


Unit-IV : IoT Physical Servers and Cloud Offerings

1 MARK QUESTIONS

1.	Why is <__init__.py> module used in python?	1	CO1
2.	What is a negative index in python?	1	CO2
3.	What are the core default modules available in python? List down a few of them?	1	CO3
4.	What is pickling and how does it differ from unpickling?	2	CO2
5.	What is slicing in python? Explain with example. ?	1	CO3
6.	What are the different ways to generate random numbers in python?	2	CO12
7.	What are iterators in python?	1	CO1
8.	What are the generators in python?	2	CO2
9.	What is the difference between list and tuple?	2	CO2
10.	What are the built-in type does python provides?	2	CO2

5 MARKS QUESTIONS

1.	Explain parsing of HTML using Beautiful Soup Library	2	CO4
2.	Explain how to display all the nodes of XML with the help of a program.	1	CO4
3.	Explain in detail JSON and parsing of JSON in Python using a program.	2	CO4
4.	Explain in detail Tree representation and parsing of XML in Python using a program.	2	CO4
5.	Explain Retrieving the board's assigned IP address	2	CO4
6.	Video file directly from a remote server with the help of a program.	2	CO4
7.	Explain JOIN used in SQL to retrieve data from SQLite database	2	CO4
8.	Explain SOA and API in detail	1	CO1
9.	Explain invoking	2	CO2
10.	Explain installing	2	CO2

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Unit-V: IoT Physical Servers and Cloud Offerings			
1 MARK QUESTIONS			
1.	How to convert a string to a number in Python?	2	CO5
2.	How to set a global variable inside a function?	2	CO5
3.	How to Share Global Variables Across Modules?.	2	CO5
4.	How to Perform Unit Testing In Python?	1	CO5
5.	How to run a python program? Explain	2	CO5
6.	Explain building blocks of a program. ?	1	CO5
7.	Explain general types of errors with examples.	1	CO5
8.	Explain the following with examples, a) values and types b) variables c) keywords.	1	CO5
9.	Explain order of operation in python? (Precedence)	2	CO5
10.	What are the different methods python provides for copying an object? Generate the code for the following statements?	2	CO5
5 MARKS QUESTIONS			
1.	Explain the following in python with example, 9.a)comments b)input() c)type()	2	CO5
2.	Explain the following with examples, a)logical operators b)Boolean Expression	2	CO5
3.	Explain i) infinite Loop 2)finite loop with example code	2	CO5
4.	Explain turning on and off an onboard component	2	CO5
5.	Explain the following a)in operator b)string comparison c)format operators	1	CO5
6.	Advantage of object-oriented code to control digital outputs	2	CO5
7.	Explain string functions(methods) with examples	2	CO5
8.	Explain Counting from 1 to 9 with LEDs	2	CO5
9.	How to improve object-oriented code to provide new features	2	CO5
10.	Explain turning on and off an onboard component	1	CO5

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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IV B.Tech - I Semester –End Examinations (Regular) December-2019**(R18CSE4152) Internet of Things
(Computer Science and Engineering)****Duration: 3 Hrs****09.12.2019****Max Marks: 70M****Section – A****Answer All the following questions****Marks: 5Qx4M = 20M**

1. List any four characteristics of IoT?
2. State Software Defined Networking?
3. What is gateway?
4. What is slicing in python? Explain with example. ?
5. Explain building blocks of a program. ?

Section – B**Answer any FIVE questions choosing at least one from each Unit****Marks: 5Qx10M = 50M****UNIT – I**

6. Demonstrate the physical design of IoT with Things of IoT and protocols of IoT..
- (OR)
7. Explain the IoT level 3 and level 5 with diagrams

UNIT - II

8. Discuss about the key elements of SDN
- (OR)
9. Define network function virtualization and explain with neat diagram

UNIT - III

10. Describe the working of modules in Python. What is difference between Semantic and Syntax analysis?
- (OR)

11. What type of Architecture reference model is used for IoT and explain

UNIT – IV

12. Explain parsing of HTML using BeautifulSoup Library.
- (OR)
13. Explain in detail Tree representation and parsing of XML in Python using a program.

UNIT-V

14. Explain the following in python with example, a)comments b)input() c)type()
- (OR)

15. Explain Counting from 1 to 9 with LEDs.

- Analyze various protocols for IoT
- Develop web services to access/control IoT devices.
- Design a portable IoT using Raspberry Pi
- Deploy an IoT application and connect to the cloud.
- Analyze applications of IoT in real time scenario

E-COMMERCE

(R18INF4185)

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution under UGC, New Delhi)
B.Tech. - IV Year – I Semester OPEN ELECTIVE – II **L T P C 3 0 0 3**
(R18INF4185) E – COMMERCE

UNIT 1:

Electronic Commerce: Overview, Definition, Advantages & Disadvantages of E-Commerce, Threats of E-Commerce, Managerial Prospective, Rules & Regulation for Controlling Commerce, Relationship Between E-Commerce & Networking, Different Types of Networking for E-Commerce, internet, Intranet, EDI Systems, Wireless Application Protocol: Definition, Hand Held Devices, Mobility & Commerce Model, Mobile Computing, Wireless Web, Web Security, Infrastructure Requirement for E-Commerce, Business Model of E-Commerce; Model Based on Transaction Type, Model Based on Transaction Party- B2B, B2C, C2B, C2C, E-Governance.

UNIT 2:

E-Strategy: Overview, Strategic Methods for developing E-Commerce. Four C's (Convergence, Collaborative, Computing, Content Management & Call Center). Convergence: Technological Advances in Convergence - Types, Convergence and its implications, Convergence & Electronic Commerce. Collaborative Computing: Collaborative Product Development, contract as per CAD, Simulations Collaboration, Security. Content Management: Definition of Content, Authoring Tools and Content Management, Content Management, Content - partnership, repositories, convergence, providers, Web Traffic.

UNIT 3:

Traffic Management: Content Marketing Call Center: Definition, Need, Tasks Handled, Mode of Operation, Equipment, Strength & Weakness of Call Center, Customer Premises Equipment (CPE).

Supply Chain Management: E-logistics, Supply Chain Portal, Supply Chain Planning Tools (SCP Tools), Supply Chain Execution (SCE), SCE Framework, Internet's Effect on Supply Chain Power.

UNIT 4:

E-Payment Mechanism: Payment through card system, E-Cheque, E-Cash, E-Payment, Threats & Protections.

E-Marketing: Home - Shopping, E-Marketing, Tele-Marketing

UNIT 5:

Electronic Data Interchange (EDI): Meaning, Benefits, Concepts, Application, EDI Model, Protocols (UN EDI, FACT/ GTDI), ANSIX-12, Data Encryption (DES/RSA)

Risks of E-Commerce: Overview, Security for E-Commerce, Security Standards, Firewall, Cryptography, Key Management, Password Systems, Digital Certificates, Digital Signatures.

Text Book:

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

Reference Books:

1. E-commerce, MM Oka, EPH
2. Frontiers of Electronics Commerce, Kalakotia, Whinston, Pearson Education
3. Electronic Commerce, Loshinpete, Murphy P. A., Jaico Publishing Housing
4. E-Commerce, Murthy, Himalaya Publishing.



SRI INDU COLLEGE OF ENGG & TECH

LESSON PLAN

(Regulation :R18)

Department of Computer Science and Engineering

Prepared
on Rev1:

Page: 1 of 2

Sub. Code & Title **R18INF4185 & E – COMMERCE**

Academic Year: 2022-23 **Year/Sem./Section** **VI-I A,B**

Faculty Name & Designation **Snavsrk Prasad & D.Roopa & 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	Electronic Commerce: Overview, Definition, Advantages & Disadvantages of E-Commerce,	T1,R1	1	4	Black Board	1	12/9/22	CO1
1.2	Threats of E-Commerce, Managerial Prospective	T1,R1	4	6	Black Board	1	13/9/22	CO1
1.3	Rules & Regulation for Controlling Commerce, Relationship Between E-Commerce & Networking	R1	6	10	Black Board	2	14/9/22	CO1
1.4	Different Types of Networking for E-Commerce	T1,R1	W1	W1	Black Board	1	15/9/22	CO1
1.5	Internet, Intranet, EDI Systems	T1	15	17	Black Board	1	16/9/22	CO1
1.6	Wireless Application Protocol: Definition	T1	18	19	Black Board	1	19/9/22	CO1
1.7	Hand Held Devices, Mobility & Commerce Model	R1	20	21	Black Board	1	20/9/22	CO1
1.8	Mobile Computing, Wireless Web, Web Security	R1	22	24	Black Board	1	23/9/22	CO1
1.9	Infrastructure Requirement for E-Commerce	R1	25	27	Black Board	1	24/9/22	CO1
1.10	Business Model of E-Commerce, Model Based on Transaction Type, Model Based on Transaction Party- B2B, B2C, C2B, C2C	R1	28	30	Black Board	1	26/9/22	CO1
1.11	E-Governance	T1	31	34	Black Board	1	27/9/22	CO1
UNIT II								
2.1	E-Strategy: Overview, Strategic Methods for developing E-Commerce	T1	43	48	Black Board	1	10/10/22	CO2
2.2	Four C's (Convergence, Collaborative, Computing, Content Management & Call Center).	T1	49	54	Black Board	2	11/10/22	CO2
2.3	Convergence: Technological Advances in Convergence – Types, Convergence and its implications	T1	55	57	Black Board	1	12/10/22	CO2
2.4	Convergence & Electronic Commerce, Collaborative Computing: Collaborative	T1	58	62	Black Board	1	12/10/22	CO2

	Product Development								
2.5	Contract as per CAD	T1	62	65	Black Board	1	13/10/22	CO2	
2.6	Simulations Collaboration, Security.	T1	66	68	Black Board	1	14/10/22	CO2	
2.7	Content Management: Definition of Content	T1	69	72	Black Board	1	15/10/22	CO2	
2.8	Authoring Tools and Content Management	T1	73	76	Black Board	1	17/10/22	CO2	
2.9	Content Management, Content - partnership, repositories.	T1	76	79	Black Board	1	17/10/22	CO2	
2.10	convergence, providers, Web Traffic	T1	80	83	Black Board	1	17/10/22	CO2	
UNIT III									
3.1	Content Marketing Call Center: Definition, Need	T1	101	106	Black Board	1		CO3	
3.2	Tasks Handled ,Mode of Operation	T1	106	109	Black Board	1		CO3	
3.3	Equipment, Strength & Weakness of Call Center	T1	109	112	Power Point Presentation	1		CO3	
3.4	Customer Premises Equipment (CPE)	T1	113	114	Black Board	1		CO3	
3.5	Supply Chain Management: E-logistics	T1	118	120	Black Board	1		CO4	
3.6	Supply Chain Portal, Supply Chain Planning Tools (SCP Tools)	T1	121	125	Black Board	1		CO4	
3.7	Supply Chain Execution(SCE), SCEFramework	T1	126	127	Black Board	1		CO4	
3.8	Internet's Effect on Supply Chain Power.	T1	129	128	Power Point Presentation	1		CO4	
UNIT IV									
4.1	E-Payment Mechanism: Payment through card system	T1	150	153	Black Board	1		CO5	
4.2	E-Cheque, E-Cash	T1	W4	W4	Black Board	1		CO5	
4.3	E-Payment, Threats& Protections.	T1	157	160	Black Board	1		CO5	
4.4	E-Marketing: Home - Shopping, E-Marketing, Tele- Marketing	T1	W2	W2	Black Board	1		CO5	
UNIT V									
5.1	Meaning, Benefits, Concepts, Application, EDI Model, Protocols (UN EDI, FACT/ GTDI)	T1	166	170	Black Board	1		CO6	
5.2	ANSIX-12, Data Encryption (DES/RSA	T1	172	175	Black Board	1		CO6	
5.3	Risks of E-Commerce: Overview, Security for E-Commerce	T1	177	180	Black Board	1		CO6	
5.4	Security Standards	T1	W5	W5	Black Board	1		CO6	
5.5	Firewall, Cryptography, Key Management, Password Systems,.	T1	W5	W5	Black Board	1		CO6	
5.6	Digital Certificates, Digital Signatures	T1,W1	19	185	Black Board	1		CO6	
	Review	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. E-commerce, MM Oka, EPH
2. Frontiers of Electronics Commerce, Kalakotia, Whinston, Pearson Education
3. Electronic Commerce, Loshinpete, Murphy P. A., Jaico Publishing Housing
4. E-Commerce, Murthy, Himalaya Publishing

Web links:

W1: https://www.vssut.ac.in/lecture_notes/lecture1428551057.pdf


W2: <https://www.smartworld.com/notes/e-commerce-pdf-notes-lecture-notes>

W3: <https://www.smartworld.com/notes/e-commerce-pdf-notes-lecture-notes>

W4: <http://notes4learners.blogspot.com/p/ecommerce-unit-1.html>

W5: https://www.iare.ac.in/sites/default/files/lecture_notes/IARE E-Commerce Lecture Notes.pdf

ASSIGNMENT

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	LESSON PLAN (Regulation:R18) Department of Computer science and Engineering		
	Sub. Code & Title	(R18INF4185) E – COMMERCE	
	Academic Year: 2022-23	Year/Sem./Section	IV/I/A
Faculty Name & Designation	Snvasrk Prasad & d.roopa & Assistant Professor		

S.No.	Assignment Questions	Course Outcome	Books To be Referred	Date Of Announcement	Date Of Submission
1	What is E-commerce? Explain the Overview of E-commerce?	CO1	T1		
2	Define B2B describe the nature of business to business transactions in e-commerce?	CO3	T1		
3	What is internet advertising? Discuss the methods of internet advertising?	CO1	T1		
4	Discuss the various available strategies of internet advertisement?	CO2	T1		
5	What are the major limitations on the growth of e-commerce in India? How do you overcome them?	CO2	T1		



SRI INDU COLLEGE OF ENGG & TECH
QUESTION BANK
(Regulation :R18)
 Department of Computer Science and Engineering

(Regulation :R18)
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 Revi:
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Sub. Code & Title **R181NF4185 & E-COMMERCE**

Academic Year: 2022-23 **Year/Sem.** **IV/I**

Faculty Name & Designation **Snvasrk Prasad &D.Roopa & 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

UNIT-1 Electronic Commerce			
1 MARKS QUESTIONS		BT Level	Course Outcome
1.	Define E-commerce?(Remembering)	1	CO1
2.	Explain about advantages and disadvantages of e-commerce?(Remembering)	1	CO1
3.	What is wireless web?(Remembering)	1	CO1
4..	Define Internet and intranet(Remembering)	1	CO1
5.	Explain EDI System(Remembering)	1	CO1
6.	Explain components of E-commerce? (Remembering)	1	CO1
7.	Define Mobile computing(Understanding)	2	CO1
8	What is web security(Remembering)	1	CO1
9	Explain about B2C Model(Remembering)	1	CO1
10	What are various components of E-Commerce Applications(Remembering)	1	CO1
5 MARKS QUESTIONS			
1.	What is E-commerce? Explain the Overview of E-commerce? (Remembering)	1	CO1
2.	Design the basic architectural elements of e-commerce and explain broad goals of e-commerce (creating)	6	CO1
3.	Briefly explain Business models of E-commerce(Remembering)	1	CO2
4.	Explain about different types of networking for E-commerce?(Remembering)	1	CO1
5.	Explain briefly about E-Governance? (Remembering)	1	CO1
6	Discuss various Transaction Parties?(Analyzing)	4	CO1
7	What are the different models of E-commerce?(Remembering)	1	CO1
8	Illustrate the different Threats of E-commerce (Remembering)	1	CO1
9	Illustrate Business models of E-commerce?(Remembering)	1	CO1
10	Explain about Wireless application protocol and web security?	1	CO1
UNIT-II E-strategy			
1 MARKS QUESTIONS			

1	What is E-Strategy.(Remembering)	1	CO2
2	What are Four C's?(Remembering)	1	CO2
3	What is Convergence(Remembering)	1	CO2
4	Explain Content Management System?(Remembering)	1	CO2
5	What is Collaborative Product Development ?(Remembering)	1	CO2
6	What are authorizing tools in Content Management.(Remembering)	1	CO2
7	Explain about Call Center?(Remembering)	1	CO2
8	Explain about Collaborative Computing?(Remembering)	1	CO2
9	Convergence implications?(Remembering)	1	CO2
10	What is Web Traffic?(Remembering)	1	CO2
5 MARKS QUESTIONS			
1	Briefly Explain Strategic Methods for developing E-commerce?(Remembering)	1	CO2
2.	Explain briefly about Four C's?(Remembering)	1	CO2
3.	What is Convergence? What are technical advances in Convergence(Evaluating)	5	CO2
4.	Explain about Convergence and its implications?(Remembering)	1	CO2
5.	Explain about Collaborative product Development?(Remembering)	1	CO2
6.	Explain about security in collaborative product development (Remembering)	1	CO2
7.	Explain about authorizing tools and content management(Remembering)	1	CO2
8	Explain about Web Traffic? (Remembering)	1	CO2
9	Explain about technological Convergence? (Remembering)	1	CO2
10	Explain about a)Content-Partnership b)Repositories c)Providers(Remembering)	1	CO2



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Sub. Code & Title	R181NF4185 & E-COMMERCE		
Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Snvasrk Prasad &D.Roopa & Asst.Prof		



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UNIT-III E-strategy

1 MARKS QUESTIONS

1Mark Questions

1.	what is traffic management(Remembering)	1	CO3
2.	What is marketing call center?(Remembering)	1	CO3
3	What is task handled?(Remembering)	1	CO3
4.	Explain strength and weakness of call center?(Remembering)	1	CO3
5	Define CPE(Remembering)	1	CO3
6.	What is E-Logistics	1	CO4
7	What is supply chain portal? (Remembering)	1	CO4
8.	Define SCP (Remembering)	1	CO4
9.	Define SCE ((Remembering))	1	CO4
10.	Define SCE Framework (Remembering)	1	CO4

5 Mark Question

1.	Explain briefly about traffic management?(Understanding)	2	CO3
2	What is Content Marketing Call Center ? (Understanding)	2	CO3
3	Explain Supply chain planning tools?(Remembering)	1	CO3
4.	Explain SCE Framework? (Remembering)	1	CO4
5	Explain about Supply Chain Execution (Remembering)	1	CO4
6.	Briefly illustrate Measuring A Supply Chain's Performance? (Understanding)	2	CO4
7.	Explain about Internet effects on Supply Chain Power? (Remembering)	1	CO4
8	Explain about a)E-Logistics b)Supply Chain Portal (Remembering)	1	CO4



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QUESTION BANK
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Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Snvasrk Prasad &D.Roopa & Asst.Prof		

UNIT-IV E-Payment Mechanism

1 Mark Questions

1.	What is E-cheque? (Remembering)	1	CO5
2.	Explain about E-cash (Remembering)	1	CO5
3.	Explain about E-payements(Remembering)	1	CO5
4.	What is E-business? (Remembering)	1	CO5
5.	what is E-Marketing?(Remembering)	1	CO5
6.	Write short notes on a) Threat b) Protection(Understanding)	2	CO5
7.	Explain about E-marketing? (Understanding)	1	CO5
8	Define Tele-Marketing (Remembering)	1	CO5
9	Define Home-shopping (Remembering)	1	CO5
10	Define E-Cash?(Understanding)	1	CO5

5 MARK QUESTION

1.	Explain about E-Payment System. (Remembering)	1	CO5
2.	Illustrate Types of Electronic Payment System? (Remembering)	1	CO5
3.	Explain E-Cash(Remembering)	1	CO5
4.	Explain Electronic Checks. (Remembering)	1	CO5
5.	Explain smart cards &Electronic Payment Systems? (Remembering)	1	CO5
6.	Explain in detail Risks in Electronic Payment systems? (Remembering)	1	CO5
7.	Discuss about the Electronic payments Issues? (Creating)	6	CO5

8	Explain Information flow with EDI? (Remembering)	1	CO5
9	Explain Applications of EDI? (Remembering)	1	CO5
10	Explain E-Marketing and its Advantages? (Remembering)	1	CO5



Sub. Code & Title	R181NF4185 & E-COMMERCE		
Academic Year: 2022-23	Year/Sem.	IV/I	
Faculty Name & Designation	Snvasrk Prasad &D.Roopa & Asst.Prof		

Unit-V Electronic Data Interchange(EDI)

1 MARKQUESTIONS

1.	Define EDI? (Remembering)	1	CO6
2.	Define Firewall? (Remembering)	1	CO6
3.	What is Digital Signatures? (Remembering)	1	CO6
4.	What are applications of Digital Signatures? (Remembering)	1	CO6
5.	Explain about Digital Certificate? (Remembering)	1	CO6
6.	Define risks of E-Commerce?(Remembering)	1	CO6
7.	Explain Security for E-Commerce?(Remembering)	1	CO6
8	What is Cryptography? (Remembering)	1	CO6
9	Define Digital Certificates? (Remembering)	1	CO6
10	Define Digital Signatures?(Remembering)	1	CO6

5 Marks Questions

1.	Explain about EDI Model?(Understanding)	1	CO6
2.	What are Protocols of EDI Models?(Understanding)	1	CO6
3.	Explain about Data Encryption?(Understanding)	1	CO6
4	What are risks in E-commerce?(Understanding)	1	CO6
5.	Illustrate the Security for E-Commerce. (Understanding)	1	CO6
6.	Explain Security Standards?(Understanding)	1	CO6

7.	Illustrate Key management and password Systems(Understanding)	1	CO6
8	Explain briefly about Digital Certificates (Remembering)	1	CO6
9	Explain about Digital Signatures? (Remembering)	1	CO6
10	Explain overview of EDI Model, befinifits, Concepts and application?	1	CO6

Write Your Ht.No.

Subject Code: R18INF4185

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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IV B.Tech I Semester

Model Question Paper

E – COMMERCE

(Common to CSE & Information Technology)

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

SECTION-A

Answer all the following questions.

(5Qx 4M = 20M)

1. What are various components of E-Commerce Applications.
2. How EDI is different from E-mail?
3. Compare public e-marketplaces and private e-marketplaces.
4. Illustrate Types of Electronic Payment System?
5. What is Digital Signatures?

SECTION – B

Answer FIVE questions choosing at least one from each unit

(5Qx10M =50M)

UNIT-I

6. Design the basic architectural elements of e-commerce and explain broad goals of e-commerce.

(OR)

7. Illustrate Business models of E-commerce?.

UNIT-II

8. What is Convergence? What are technical advances in Convergence.

(OR)

9. Explain about authorizing tools and content management

UNIT-III

10. Explain Supply chain planning tools?

(OR)

11. Explain about Internet effects on Supply Chain Power?

UNIT-IV

12. Illustrate Types of Electronic Payment System?

(OR)

13. Explain Information flow with EDI?

UNIT-V

14. Illustrate the Security for E-Commerce.

(OR)

15. Explain about Digital Signatures?.

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY D4

IV B.Tech - I Semester – Model Mid Question Paper (R18INF4185) E-COMMERCE

(Common to CSE & Information Technology)

Duration: 90Mins

Max Marks: 25M

Section – A

Answer **All** the questions

Marks: 5Qx1M = 5M

1. Define Internet and intranet?
2. What are various components of E-Commerce Applications.
3. What is E-Strategy.
4. What is Web Traffic?
5. Define SCP?

Section – B

Answer any **FOUR** questions

Marks: 4Qx5M = 20M

6. Briefly explain Business models of E-commerce.
7. Explain briefly about E-Governance.
8. What is Convergence? What are technical advances in Convergence.
9. Explain about authorizing tools and content management
10. Explain Supply chain planning tools?

