||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust (R.)

SJC INSTITUTE OF TECHNOLOGY

An Autonomous Institution under VTU from 2024-25

AICTE Approved, Accredited by NAAC with A+ Grade & NBA (CSE, ISE, ECE, ME, CV & AE), Gold Rated by QS I-Gauge

P.B. No.20, B.B Road, Chikkballapur - 562 101, Karnataka

Estd : 1986

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DR.S.BHARGAVI

PROFESSOR

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

FEBRUARY 2025 – MAY 2025

(EVEN SEM-25)

ACADEMIC FILE

VIKAS

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No. 1000

ACADEMIC FILE:

S.No.	Checklist
1	Calendar of Events (Department / College / VTU)
2	Faculty Time Table
3	Vision, Mission of the Department and Institution PEOs and PSOs of Department
4	Students List (for Theory & Practical Courses, Projects & Elective Courses), Attendance Registers, Result Analysis
5	Academic Diary
6	VTU Related Orders
7	Blue Books
8	Details about the Projects Guided (Awarded/ Funded)
9	Identification of the Weaker and Brighter Students (if any Extra Classes Conducted for the Weaker Students, Attendance and Related Notes/Materials as a Proof)
10	Gaps in the Subjects Handled and the Relative Actions Taken (Mentor Files/ Docs)

|| Jai Sri Gurudev ||

JC Institute of Technology, Chickballapur-562101

Abstract of the Department Calendar of Events 2025 (EVEN Semester)

Sl No	Programs	February 2025	March 2025	April 2025	May 2025	June 2025	July 2025
1.	Commencement of Even Sem Classes	10th & 15th Feb 2025					
2.	HODs Meeting /IC Meeting	10,17 & 24th Feb 25	3,10,17,24 & 31st Mar 25	7,14,21 & 28th April 25	5,12,19, 26th May 25	2,9,16, 23 & 30th June 25	7,14,21 &28th July 25
3.	Staff Council Meeting		Every Wednesday	Every Wednesday	Every Wednesday	Every Wednesday	Every Wednesday
4.	Dept. Staff Meeting	Every Wednesday	Every Wednesday	Every Wednesday	Every Wednesday	Every Wednesday	
5.	Dept. Council Meeting	1st Week	1st Week	1st Week	1st Week	1st Week	1st Week
6.	Tutorials						
7.	Tests		24 to 26th March 25	25 to 28th April 25	24 to 27th May 25		
8.	Proctor CR Meeting		2nd April 25	2nd April 25	6th May 25	4th June 25	
9.	Class Teachers Meeting		2nd April 25	2nd April 25	6th May 25	4th June 25	
10.	Parent Teacher meeting		8th March 2025	4th Week	4th June 25		
11.	Seminars/TDP/Workshop/Guest lecture		09 & 10th Oct 24	11& 12th Nov 24	12&13th Dec 24		
12.	Industrial Visits		1st Week				
13.	Seed Activity	22nd Feb25	29th March 25	29th April 25	20th May25		
14.	Attendance Announcement		22nd March25	23rd April 25	2nd Week		
15.	Project Phase 1 Review		3rd Week	25th & 26th April 25	6th & 7th May 2025		
16.	Internship Review		25 & 26th March25		2nd Week		
17.	Technical seminar			4th Week	2nd Week		
18.	Syllabus Coverage	20 %	30%	25%	25%		
19.	Alumni meet	2nd Week	2nd Week	2nd Week	2nd week	2nd Week	2nd Week
20.	Project Exhibition				9th May 2025		
21.	National / International Conference			28th & 29th April 2025			
22.	NSS / IEEE / AICTE Activity		2nd Week	2nd Week	2nd Week		
23.	Last Working Day				31st May 25		
24.	Commencement of Odd Sem Classes					4th August 2025	

Prof. Head
Dept. of Electronics & Communication
S.J.C. Institute of Technology
Chickballapur-562101.
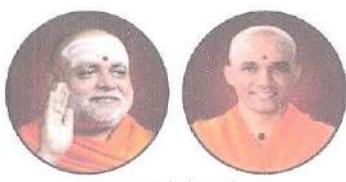
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Calendar of Events
ACADEMIC YEAR 2024-2025 (EVEN SEMESTER)

Week No	ಫೆಬ್ರವರಿ 2025							No. of Working Days	FEBRUARY 2025
	MON	TUE	WED	THU	FRI	SAT	SUN		
1						1	2	1	
2	3	4	5	6	7	8	9	5	Feb 3rd HOD's/IC Meeting
3	10	11	12	13	14	15	16	6	Feb 10th Commencement of Classes for IV and VI Sem B.E, Feb 15th Commencement of Classes for VIII Sem B.E
4	17	18	19	20	21	22	23	6	Feb 17th HOD's/IC Meeting
5	24	25	26	27	28			4	Feb 24th HOD's/IC Meeting, Feb 26th Maha Shivaratri

Week No	ಮಾರ್ಚ್ 2025							No. of Working Days	MARCH 2025
	MON	TUE	WED	THU	FRI	SAT	SUN		
6						1	2	1	
7	3	4	5	6	7	8	9	6	Mar 3rd HOD's/IC Meeting
8	10	11	12	13	14	15	16	6	Mar 10th HOD's/IC Meeting
9	17	18	19	20	21	22	23	6	Mar 17th HOD's/IC Meeting
10	24	25	26	27	28	29	30	6	Mar 24th to 26th CIE-1 for IV and VI Sem B.E., Mar 25th to 26th Internship/Project Review -1 for VIII Sem B.E., Mar 29th Seed Activity, Mar 30th Ugadi
11	31								Mar 31st Ramzan

Week No	ಏಪ್ರಿಲ್ 2025							No. of Working Days	APRIL 2025
	MON	TUE	WED	THU	FRI	SAT	SUN		
12		1	2	3	4	5	6	5	Apr 6th Sri Rama Navami
13	7	8	9	10	11	12	13	5	Apr 7th HOD's/IC Meeting, Apr 10th Sri Mahavir Jayanthi
14	14	15	16	17	18	19	20	4	Apr 14th Ambedkar Jayanthi, Apr 18th Good Friday
15	21	22	23	24	25	26	27	6	Apr 21st HOD's/IC Meeting, Apr 25th to 28th CIE-II for IV and VI Sem B.E., Apr 25th to 26th Internship/Project Review -2 for VIII Sem B.E.
16	28	29	30					2	Apr 30th Basaveswara Jayanthi

Week No	ಮೇ 2025							No. of Working Days	MAY 2025
	MON	TUE	WED	THU	FRI	SAT	SUN		
17				1	2	3	4	2	May 1ˢᵗ Workers Day,
18	5	6	7	8	9	10	11	6	May 5ᵗʰ HOD's/IC Meeting, May 10ᵗʰ Seed Activity
19	12	13	14	15	16	17	18	6	May 12ᵗʰ HOD's/IC Meeting, May 15ᵗʰ Last Working Day for VIII Semester, May 16ᵗʰ Commencement of Theory Exams for VIII Sem B.E
20	19	20	21	22	23	24	25	6	May 19ᵗʰ HOD's/IC Meeting, May 24ᵗʰ to 27ᵗʰ CIE-III for IV and VI Sem B.E.,
21	26	27	28	29	30	31		6	May 26ᵗʰ HOD's/IC Meeting, May 27ᵗʰ Commencement of Practical Exams for VIII Sem B.E, May 31ˢᵗ Last Working Day for IV and VI Semester

Week No	ಜೂನ್ 2025							No. of Working Days	JUNE 2025
	MON	TUE	WED	THU	FRI	SAT	SUN		
22							1	0	
23	2	3	4	5	6	7	8	5	June 2ⁿᵈ Commencement of Practical Exams for IV and VI Sem B.E, June 7ᵗʰ Bakrid
24	9	10	11	12	13	14	15	6	June 9ᵗʰ HOD's/IC Meeting
25	16	17	18	19	20	21	22	6	June 16ᵗʰ Commencement of Theory Exams for IV and VI Sem B.E
26	23	24	25	26	27	28	29	6	June 23ʳᵈ HOD's/IC Meeting, June 28ᵗʰ Seed Activity
27	30							1	June 30ᵗʰ HOD's/IC Meeting

Week No	ಜುಲೈ 2025							No. of Working Days	JULY 2025
	MON	TUE	WED	THU	FRI	SAT	SUN		
28		1	2	3	4	5	6	5	July 6ᵗʰ Moharam
29	7	8	9	10	11	12	13	6	July 7ᵗʰ HOD's/IC Meeting
30	14	15	16	17	18	19	20	6	July 14ᵗʰ HOD's/IC Meeting
31	21	22	23	24	25	26	27	6	July 21ˢᵗ HOD's/IC Meeting
32	28	29	30	31				4	July 28ᵗʰ HOD's/IC Meeting

Meetings's	Commencement & Last Working Day	Seed Activity	CIE	Induction/Internship	Holiday

Commencement of ODD Semester Classes for III Sem, V Sem and VII Sem B.E. on 04.08.2025

VISION	MISSION
Preparing Competent Engineering and Management Professional to Serve the Society	• Providing Students with a Sound Knowledge in Fundamentals of their branch of Study. • Promoting Excellence in Teaching, Training, Research and Consultancy. • Exposing Students to Emerging Frontiers in various domains enabling Continuous Learning. • Developing Entrepreneurial acumen to venture into Innovative areas. • Imparting Value based Professional Education with a sense of Social Responsibility.

Dr. THYAGARAJ N R
Chief Coordinator, IQAC

Dr. G.T. RAJU
PRINCIPAL

Prof. B. E. Rangaswamy, Ph.D.
REGISTRAR

REF: VTU/BGM/BoS/Academic Calendar/2024-25/ 5487

DATE: 2 4 JAN 2025

NOTIFICATION

Subject: Tentative Academic Calendar of EVEN, semesters of B.E./B.Tech./B.Arch.,/ B. Plan.,/B. Des./B.Sc., programs for academic year 2024-25 regarding...

Reference: The approval Hon'ble Vice-Chancellor, dated:24.01.2025

The Tentative Academic Calendar of the EVEN, semesters of B.E./ B.Tech.,/ B.Arch,/ B. Plan.,/ B. Des,/ B. Sc programs, for the academic year 2024-25 are notified as mentioned attached file (Annexure-I)

Please note:

1. The academic sessions for the aforementioned semesters should commence on the **date mentioned** above

2. If necessary, colleges may conduct extra classes on the 1st and 3rd Saturdays and Sundays to ensure the completion of academic activities within the timeline specified in the Academic Calendar.

3. Faculty and staff are expected to be available for any tasks assigned by the University.

4. Notifications regarding the Calendar of Events for University Examinations will be issued periodically by the Registrar (Evaluation).

5. Autonomous Colleges must also comply with the Academic Calendar. Any changes to academic terms or the examination schedule by Autonomous Colleges require prior approval from the University.

6. For suggestions or clarifications, please email **registrar@vtu.ac.in**.

The Principals of Non-Autonomous, Constituent, and Autonomous Engineering Colleges are hereby informed to bring the academic calendar to the notice of all concerned.

24/01/25

REGISTRAR

To,

1. The Principals of all Non-autonomous/ constituent /Autonomous Engineering Colleges under the ambit of VTU Belagavi.

2. The chairperson, of the Department of Mechanical Engineering /Civil Engineering /Computer Science and Engineering& Communication Electronics Engineering of the University.

Copy to.

1. To the Hon'ble Vice-Chancellor through the secretary to VC, VTU Belagavi for information
2. The Registrar (Evaluation), VTU Belagavi for information and needful.
3. The Regional Directors (I/c) of all the regional offices of VTU for circulation.
4. The Director ITI SMU, VTU Belagavi for information and to make arrangements to upload the Academic Calendar on the VTU web portal.
5. The Director of Physical Education, VTU Belagavi for information
6. The Director, Central Placement Cell, VTU Belagavi for information
7. The Special Officer Library, VTU Belagavi for information
8. All the concerned Special Officer/s and Caseworker/s of the academic section, VTU, Belagavi
9. Office copy

Academic Calendar for EVEN Semester of UG programs for the year 2024-25

	IV semester B.E./B.Tech.	IV semester B.Arch.	IV semester B.Plan/B.Des	IV semester B.Sc.	VI semester B.E./B.Tech.	VI Semester B.Arch.	VI semester B. Plan	VIII semester B.E./B.Tech.	VIII semester B.Plan.	VIII semester B.Arch
Commencement of the Semester	10.02.2025	10.02.2025	10.02.2025	10.02.2025	10.02.2025	10.02.2025	10.02.2025	15.02.2025	10.02.2025	10.02.2025
Internship / Students Induction Program										
Commencement of Classes	10.02.2025	10.02.2025	10.02.2025	10.02.2025	10.02.2025	10.02.2025	10.02.2025	15.02.2025	10.02.2025	10.02.2025
Last Working day of the Semester	31.05.2025	31.05.2025	31.05.2025	31.05.2025	31.05.2025	31.05.2025	31.05.2025	15.05.2025	15.05.2025	31.05.2025
Practical Examination	02.06.2025 To 13.06.2025	02.06.2025 To 09.06.2025	02.06.2025 To 09.06.2025	02.06.2025 To 06.06.2025	02.06.2025 To 12.06.2025	02.06.2025 To 12.06.2025	02.06.2025 To 12.06.2025	27.05.2025 To 02.06.2025	27.05.2025 To 02.06.2025	02.06.2025 To 12.06.2025
Theory Examinations	16.06.2025 To 01.08.2025	11.06.2025 To 12.07.2025	11.06.2025 To 22.07.2025	09.06.2025 To 14.07.2025	16.06.2025 To 01.08.2025	16.06.2025 To 14.07.2025	16.06.2025 To 22.07.2025	16.05.2025 To 26.05.2025	16.05.2025 To 26.05.2025	16.06.2025 To 12.07.2025
Commencement of NEXT Semester	04.08.2025	14.07.2025	28.07.2025	21.07.2025	04.08.2025	21.07.2025	28.07.2025	----	----	16.07.2025

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SJC Institute of Technology, Chickballapur

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Department : Electronics and Communication Engineering

Personal Time Table

Year: 2024-2025 [EVEN]
Semester: VI & M.Tech   **Section:ᵗ A**
Staff name : Dr.S BHARGAVI

W.E.F-10.02.2025
RoomNo.:LH305

DAYS/TIME	9.00 –10.00	10.00-11.00	11.00-11.10	11.10-12.10	12.10-1.10	1.10-2.00	2.00-3.00	3.00-4.00	4.00-4.15	4.15-5.00
MONDAY		MA	Teabreak	VLSI LAB A1		Lunch break	MMC		Break	
TUESDAY	MMC			MA	MMC		VLSI LAB A2			MMC
WEDNESDAY								MA		
THURSDAY	MA			MMC						
FRIDAY	ESD INT LAB C Sec			VLSI LAB A3						
SATURDAY							SEED Activity/Alumni talk			

Note : The time table must include Subject name, Staff name and room numbers

Prepared By	Anil Kumar R	Approved By	Dr. C Rangaswamy
Date & Sign		Data & Sign	

SJC Institute of Technology, Chickballapur

Jai Sri Gurudev!!

(VTU Affiliated, AICTE Approved, Accredited by NBA, NAAC)

Department : Electronics and Communication Engineering

Class Time Table

Year: 2024 - 2025[EVEN]

Semester: VI

Section: 'A'

W.E.F-05.05.2025

Room No.: LH 305

DAYS/TIME	9.00 – 12.30	12.30 - 1.00	1.00 - 1.50	1.50-2.40	2.40-3.30	3.30-4.30
MONDAY	Placement Training		ESD	VLSI	MMC	VLSI
TUESDAY	Placement Training		IAI	MMC	VLSI Lab A1/ IOT Lab A2	
WEDNESDAY	Placement Training		VLSI	IAI	ESD INT LAB	
THURSDAY	Placement Training	Lunch break	MMC	VLSI	VLSI Lab A2/ IOT Lab A1	
FRIDAY	Placement Training		IKS	IAI	ESD	ESD
SATURDAY	Placement Training			Placement Training		

Subject Code	Sub. Expansion	Staff Name
BEC601	Embedded System Design	Ravi M V
BEC602	VLSI design and Testing	Dr.Veena S
BEC613A	Multimedia Communication	Dr.Bhargavi S
BAI654D	Introduction to AI	Dr.Ambika L G
BNXG685	Project Phase-I	Dr.Pranjala Tiwari
BECL606	VLSI Design and Testing Lab	Dr.VS,Dr.SB /Dr.VS,Dr.SB
BEC657C	Ability Enhancement course-V(IoT Lab)	SEN,RMV / Dr.SP, NAC
BNSK559	National Service scheme(NSS)	Chandan T
BPEK559	Physical Education(PE)	
BYOK559	Yoga	
BIKS609	Indian Knowledge System	Dr.Veena S

Note:2nd week Alumni Talk; NSS,PE,YOGA, 4th week SEED Activity

Class Teacher:
Ravi M V

Mentor:
Srivani E N,1SJ22EC001 To 22EC021
Vishala I L,1SJ22EC022 To 22EC042
Dr.Veena S,1SJ22EC043 To 22EC063

TTO

CTTO

HOD

PRINCIPAL

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Vision

Preparing Competent Engineering and Management Professionals to Serve the Society

Mission

➢ Providing Students with a Sound Knowledge in Fundamentals of their branch of Study.

➢ Promoting Excellence in Teaching, Training, Research and Consultancy.

➢ Exposing Students to Emerging Frontiers in various domains enabling Continuous Learning.

➢ Developing Entrepreneurial acumen to venture into Innovative areas

➢ Imparting Value based Professional Education with a sense of Social Responsibility

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Department of Electronics & Communication Engineering

Vision

Transforming Individuals into Competent Electronics and Communication Engineers to fulfill Societal needs

Mission

➤ Providing Students with a Sound Knowledge in Fundamentals of Electronics and Communication Engineering

➤ Empowering Faculty and students by expanding their expertise in emerging Technogies through dedicated research and ongoing improvement initiatives

➤ Fostering strong industry-institute collaboration to enhance understanding of cutting-edge technologies and cultivate a spirit of entrepreneurship

➤ Equipping students with technical expertise and strong professional ethics, enabling them to develop innovative solution that address societal needs

➤ Encouraging students for continuing education and moulding them for lifelong learning

Prof. & Head
Dept. of Electronics & Communication
S.J.C. Institute of Techonology
Chickballapur-562101

PROGRAM OUTCOMES

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

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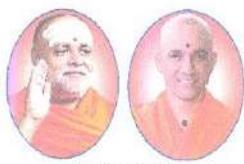
Department of Electronics & Communication Engineering

Program Educational Objectives (PEO's)

PEO1: Graduates of the Program will have Successful Technical and Professional Career in Engineering, Technology and Multidisciplinary Environments.

PEO2: Graduates of the Program will utilize their Knowledge, Technical and Communication Skills to Propose Optimal Solutions to Problems Related to Society in the Field of Electronics and Communication.

PEO3: Graduates of the Program will Exhibit Good Interpersonal Skills, Leadership Qualities and adapt themselves for Lifelong Learning

Programme Specific Outcomes (PSO's)

PSO1: Ability to Absorb and Apply Fundamental Knowledge of Core Electronics and Communication Engineering in the Analysis, Design and Development of Electronics Systems as well as to Interpret and Synthesize Experimental Data Leading to Valid Conclusions.

PSO2: Ability to Solve Complex Electronics and Communication Engineering Problems, using Latest Hardware and Software Tools, Along With Analytical and Managerial Skills to arrive at Appropriate Solutions, either Independently or in Team.

Prof. & Head
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

6th SEMESTER A SECTION STUDENTS LIST

Sl. No.	USN	Name of The Student
1	1SJ20EC070	KIRAN RAJ BASAYYA HIREMATH
2	1SJ21EC056	HEMANTH KUMAR A
3	1SJ22EC001	ABHI S V
4	1SJ22EC002	ABHIJITH J V
5	1SJ22EC003	ABHISHEK H KANKATKAR
6	1SJ22EC004	ADARSHA R
7	1SJ22EC005	AJAY KUMAR A V
8	1SJ22EC006	AKHIL M
9	1SJ22EC007	AKSHAYA K S
10	1SJ22EC008	AKSHITHA M
11	1SJ22EC009	AMARESH H
12	1SJ22EC010	AMBIKA P
13	1SJ22EC011	AMULYA M
14	1SJ22EC012	ANANYA A M
15	1SJ22EC013	ANBAR SABAHATH
16	1SJ22EC014	ANIL KUMAR K A
17	1SJ22EC015	ANUSHREE K R
18	1SJ22EC017	AYESHA M
19	1SJ22EC018	AYUSH M
20	1SJ22EC019	B V BRAMHANANDA REDDY
21	1SJ22EC020	BHARATH H S
22	1SJ22EC021	BHARATHI M
23	1SJ22EC022	BHAVANA B M
24	1SJ22EC023	BHAVYA S A
25	1SJ22EC024	BHOOMIKA G
26	1SJ22EC025	BHUGANIPALLI SREE VIDYA
27	1SJ22EC026	BHUMIKA
28	1SJ22EC027	BHUVAN Y A
29	1SJ22EC028	CHAITHRA N S
30	1SJ22EC029	CHANDAN A
31	1SJ22EC030	CHANDAN G
32	1SJ22EC031	CHANDANA H S
33	1SJ22EC032	CHANDANA R
34	1SJ22EC033	CHANDANA V R
35	1SJ22EC034	CHANDINI T D
36	1SJ22EC035	CHANDU SHREE Y C
37	1SJ22EC036	CHETHAN S N
38	1SJ22EC037	CHIRAG H

39	1SJ22EC038	D NISARGA
40	1SJ22EC039	DARSHANNAYKA
41	1SJ22EC040	DEEKSHA REDDY M
42	1SJ22EC041	DEEKSHITH PATEL C
43	1SJ22EC042	DEEPIKA M
44	1SJ22EC043	DEVARAJU C V
45	1SJ22EC044	DHANUSH A AGNI
46	1SJ22EC045	DHANUSH M
47	1SJ22EC046	DRUTHI G A
48	1SJ22EC047	DUDDU SIDDARTH
49	1SJ22EC048	G AKANKSHA
50	1SJ22EC049	GANAVIKA N
51	1SJ22EC050	GOKUL KUMAR B S
52	1SJ22EC051	GOVARDHAN V K
53	1SJ22EC052	GOWTHAM R
54	1SJ22EC053	GUNASHREE D S
55	1SJ22EC054	HAFSA KHANAM
56	1SJ22EC055	HAMSA K S
57	1SJ22EC056	HARSHITH GOWDA N
58	1SJ22EC057	HARSHITH K R
59	1SJ22EC058	HARSHITH KUMAR A
60	1SJ22EC059	HARSHITHA J V
61	1SJ22EC060	HARSHITHA N
62	1SJ22EC061	HARSHITHA P S
63	1SJ22EC062	HEMANTH KUMAR M P
64	1SJ22EC063	HITHA D
65	1SJ22EC064	JAYANTH B S
66	1SJ23EC400	ACHHUTHAREDDY C P
67	1SJ23EC401	CHANDRA SHEKARA M
68	1SJ23EC402	CHARAN KUMAR
69	1SJ23EC403	DARSHAN H R

||Jai Sri Gurudev||
SJC Institute of Technology Chickballapur-562101
Dept. of Electronics & Communication Engg
VLSI Design & Testing Lab (BECL606)
Batch List-2025

Subject:VLSI LAB Code: BECL606 Lab Conducting Staff: Dr. SB, Dr. VS		Class: 6th Sem Batch: A₁	Subject:VLSI LAB Code:BECL606 Lab Conducting Staff: Dr. SB, Dr. VS		Class: 6th Sem Batch: A₂
Sl No	Name of the Students	USN	Sl No	Name of the Students	USN
1	KIRAN RAJ B. H	1SJ20EC070	1	BHAVYA S A	1SJ22EC023
2	HEMANTH KUMAR A	1SJ21EC056	2	BHOOMIKA G	1SJ22EC024
3	ABHI S V	1SJ22EC001	3	B. SREE VIDYA	1SJ22EC025
4	ABHIJITH J V	1SJ22EC002	4	BHUMIKA	1SJ22EC026
5	ABHISHEK H K	1SJ22EC003	5	BHUVAN Y A	1SJ22EC027
6	ADARSHA R	1SJ22EC004	6	CHAITHRA N S	1SJ22EC028
7	AJAY KUMAR A V	1SJ22EC005	7	CHANDAN A	1SJ22EC029
8	AKHIL M	1SJ22EC006	8	CHANDAN G	1SJ22EC030
9	AKSHAYA K S	1SJ22EC007	9	CHANDANA H S	1SJ22EC031
10	AKSHITHA M	1SJ22EC008	10	CHANDANA R	1SJ22EC032
11	AMARESH H	1SJ22EC009	11	CHANDANA V R	1SJ22EC033
12	AMBIKA P	1SJ22EC010	12	CHANDINI T D	1SJ22EC034
13	AMULYA M	1SJ22EC011	13	CHANDU SHREE Y C	1SJ22EC035
14	ANANYA A M	1SJ22EC012	14	CHETHAN S N	1SJ22EC036
15	ANBAR SABAHATH	1SJ22EC013	15	CHIRAG H	1SJ22EC037
16	ANIL KUMAR K A	1SJ22EC014	16	D NISARGA	1SJ22EC038
17	ANUSHREE K R	1SJ22EC015	17	DARSHANNAYKA	1SJ22EC039
18	AYESHA M	1SJ22EC017	18	DEEKSHA REDDY M	1SJ22EC040
19	AYUSH M	1SJ22EC018	19	DEEKSHITH PATEL C	1SJ22EC041
20	B V BRAMHANANDA REDDY	1SJ22EC019	20	DEEPIKA M	1SJ22EC042
21	BHARATH H S	1SJ22EC020	21	DEVARAJU C V	1SJ22EC043
22	BHARATHI M	1SJ22EC021	22	DHANUSH A AGNI	1SJ22EC044
23	BHAVANA B M	1SJ22EC022	23	DHANUSH M	1SJ22EC045

Lab In-Charge: Dr. K Ezhilarasan
Associate Professor

Supporting Staff: Chaithranjali Y J
Asst. Instructor

HOD
Dept of E&C
Prof. & Head
Dept. of Electronics & Communication
S J.C. Institute of Techonolog
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Dept. of Electronics & Communication Engg
VLSI Design & Testing Lab (BECL606)
Batch List-2025
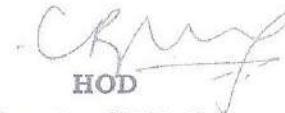
Sl No	Name of the Students	USN	Sl No	Name of the Students	USN
Subject:VLSI LAB **Code: BECL606**		**Class: 6th Sem** **Batch: A₃**	**Subject:VLSI LAB** **Code:BECL606**		**Class: 6th Sem** **Batch: B₁**
Lab Conducting Staff: Dr. SB, Dr. VS			**Lab Conducting Staff: Dr. EZ, PKDC**		
1	DRUTHI G A	1SJ22EC046	1	JAYANTH V	1SJ22EC065
2	DUDDU SIDDARTH	1SJ22EC047	2	JEEVAN M P	1SJ22EC066
3	G AKANKSHA	1SJ22EC048	3	JHANSI M	1SJ22EC067
4	GANAVIKA N	1SJ22EC049	4	K N ABHISHEK	1SJ22EC068
5	GOKUL KUMAR B S	1SJ22EC050	5	KALPANA P S	1SJ22EC069
6	GOVARDHAN V K	1SJ22EC051	6	KARTHEEK DK	1SJ22EC070
7	GOWTHAM R	1SJ22EC052	7	KARTHIK R S	1SJ22EC071
8	GUNASHREE D S	1SJ22EC053	8	KAVITHA M	1SJ22EC072
9	HAFSA KHANAM	1SJ22EC054	9	K BHAGYA	1SJ22EC074
10	HAMSA K S	1SJ22EC055	10	KHUSHI B S	1SJ22EC075
11	HARSHITH GOWDA N	1SJ22EC056	11	KIRAN KUMAR CG	1SJ22EC076
12	HARSHITH K R	1SJ22EC057	12	KISHOR B N	1SJ22EC077
13	HARSHITH KUMAR A	1SJ22EC058	13	KUSHAL C D	1SJ22EC078
14	HARSHITHA J V	1SJ22EC059	14	KUSUMA NS	1SJ22EC079
15	HARSHITHA N	1SJ22EC060	15	LAHARI S	1SJ22EC080
16	HARSHITHA P S	1SJ22EC061	16	LAYA S	1SJ22EC081
17	HEMANTH KUMAR M P	1SJ22EC062	17	LIKHITH A REDDY G	1SJ22EC082
18	HITHA D	1SJ22EC063	18	LIKHITH N R	1SJ22EC083
19	JAYANTH B S	1SJ22EC064	19	LOHITH M C	1SJ22EC084
20	ACHHUTHAREDDY C P	1SJ23EC400	20	MADAN KUMAR M	1SJ22EC085
21	CHANDRA SHEKARA M	1SJ23EC401	21	MADEEP KUMAR S D	1SJ22EC086
22	CHARAN KUMAR	1SJ23EC402	22	MADHAN GOWDA R S	1SJ22EC087
23	DARSHAN H R	1SJ23EC403	23	MADHAVA H S	1SJ22EC088

Lab In-Charge: Dr. K Ezhilarasan
Associate Professor

Supporting Staff: Chaithranjali Y J
Asst. Instructor

HOD
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Prof. & Head
Dept. of Electronics & Communication
S J.C. Institute of Technology
Chickballapur-562101

S J C Institute of Technology, Chickballapur

Department of Electronics and Communication Engineering

MAJOR PROJECT GROUP STUDENTS LIST

Guide: Dr.S.Bhargavi

Sl.No.	USN	Student Name	Project Title
1.	1SJ21EC003	ADDAGIRI SNEHAROYAL	Implementation of Automated Solar-Powered Battery Charging System for Electric Vehicles (EVs) with IOT Integration
2.	1SJ21EC029	**CHANDRIKA KP (T L)**	
3.	1SJ21EC079	MEGHANA R	
4.	1SJ21EC094	NAVYA M	

Sl.No.	USN	Student Name	Project Title
1.	1SJ21EC002	ADARSH R A	Design and Implementation of Smart Agriculture Systems Using AI
2.	1SJ21EC004	AHALYA G	
3.	1SJ21EC011	ANKITA PATIL	
4.	1SJ21EC028	**CHANDRAKANTH H V (T L)**	

Sl.No.	USN	Student Name	Project Title
1.	1SJ22EC002	ABHIJITH J V	
2.	1SJ22EC003	ABHISHEK H K	Smart signal booster for cellular and Wi-Fi communication
3.	1SJ22EC051	GOVARDHAN V K	

Sl.No.	USN	Student Name	Project Title
1.	1SJ22EC008	AKSHITHA M	
2.	1SJ22EC010	AMBIKA P	Intelligent Blood Glucose monitoring and Insulin Dosage Recommendation System using AI
3.	1SJ22EC053	GUNASHREE D S	

Sl.No.	USN	Student Name	Project Title
1.	1SJ22EC092	MANUSH R	
2.	1SJ23EC406	PAVAN KUMAR N	Design and deployment of Intelligent Traffic system using edge AI and 5 G
3.	1SJ22EC076	KIRAN KUMAR CG	

Signature of the Project Guide
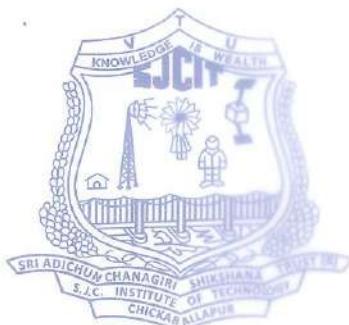
Name : Dr .S . Bhargavi

Designation : Professor

Department : Electronics and Communication

Period : From 10-02-2025 To 31-05-2025

THEORY RECORD OF ATTENDANCE AND ASSESSMENT

Period : From 10.02.2025 To 31.05.2025   Semester : ~~Odd~~/ Even ✓

Name of the Faculty	:	Dr. S. BHARGAVI
Designation	:	PROFESSOR
Department	:	ELECTRONICS & COMMUNICATION

Sl. No.	Sem. / Sec. / Branch	Course Title	Course Code
1	VI / A / ECE	MULTIMEDIA COMMUNICATION	BCE613A
2	VI / A1, A2, A3 / ECE	VLSI DESIGN AND TESTING – LAB	BECL606
3	VI / C / ECE	EMBEDDED SYSTEM DESIGN INTEGRATED LAB	BEC601
4			

	REVIEWS at the End of the				End of Semester
	1st Month	2nd Month	3rd Month	4th Month	
Staff	03/03/2025	02/04/2025	02/05/2025	31/05/2025	31/05/2025
HOD Reviewer	03/3/25.	2/4/25	02/05/25	31/05/25	31/05/25

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Class : VI A

Sl. No.	USN	NAME	10/02	11/02	12/02	13/02	18/02	19/02	19/02	20/02	20/02	05/03	04/03	05/03	06/03	10/03
			5	1	4	3	1	2	3	3	4	5	1	4	3	5
1	1S20EC070	KIRAN RAJ BASAYYA HIREMATH (9)	1	2	3	4	5	6	7	8	9	10	11	12	13	A(P)
2	1S21EC056	HEMANTH KUMAR A	A	A	1	2	3	4	5	6	7	8	9	10	11	A
3	1S22EC001	ABHI S V	1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	1S22EC002	ABHIJITH J V	1	2	3	4	5	6	7	8	9	10	11	12	13	14
5	1S22EC003	ABHISHEK H KANKATKAR (9)	A	A	A	1	2	3	A	4	5	6	A	A	A	A
6	1S22EC004	ADARSHA R	1	2	3	4	5	6	7	8	9	10	11	12	A	A
7	1S22EC005	AJAY KUMAR A V	A	1	2	3	4	5	6	7	8	9	10	A	12	A
8	1S22EC006	AKHIL M	1	2	3	4	5	6	7	8	8	9	10	A	12	A
9	1S22EC007	AKSHATA K S	1	2	3	4	5	6	7	8	8	9	10	11	12	13
10	1S22EC008	AKSHITHA M	1	2	3	4	5	6	7	8	9	10	11	12	13	14
11	1S22EC009	AMARESH H	1	2	3	4	5	6	7	8	9	10	11	12	13	14
12	1S22EC010	AMBIKA P	1	2	3	4	5	6	7	8	8	9	10	11	12	13
13	1S22EC011	AMULYA M (12)	A	A	1	2	3	4	5	6	7	8	A(P)	A(P)	A(P)	A(P)
14	1S22EC012	ANANYA A M	1	2	3	4	5	6	7	8	9	10	A	12	A	A(L)
15	1S22EC013	ANBAR SABAHATH (6)	1	2	3	4	5	6	7	8	9	10	11	12	13	13
16	1S22EC014	ANIL KUMAR K A (3)	A	A	2	3	4	5	6	7	8	9	10	A(P)	10	A(L)
17	1S22EC015	ANUSHREE K R	1	2	3	4	5	6	7	8	9	10	11	12	13	14
18	1S22EC017	AYESHA M	A	1	2	3	4	5	6	7	8	9	10	11	12	13
19	1S22EC018	AYUSH M (2)	1	2	A	3	4	5	6	7	8	9	10	8	9	10
20	1S22EC019	B V BRAHMANANDA REDDY (3)	1	2	3	4	5	A	A	6	7	8	9	10	11	A(L)
21	1S22EC020	BHARATH H S (3)	1	2	3	4	5	6	7	8	7	8	A(P)	A(P)	A(P)	10

ASSESSMENT

E.c

20/02	20/02	05/03	04/03	05/03	06/03	10/03	Attendance				CIE Marks				Assignment Marks	CIE Marks	SEE Marks
3	4	5	1	4	3	5	A1	A2	A3	Final	T1 (50)	T2 (50)	T3 (50)	Avg. (25)	(25)	(50)	(50)
8	9	10	11	12	13	14											
8	9	10	11	12	13	A(P)	64	67	79	95	AB	21	26	12	24	36	22
6	7	8	9	10	11	A	82	78	86	86	26	32	13	15	24	39	18
8	9	10	11	12	13	14	95	89	93	93	39	46	44	23	25	48	32
8	9	A	10	11	12	13	95	89	91	91	37	43	05	21	25	46	30
4	5	6	7	A	8	9	64	53	68	85	35	AB	20	14	23	37	23
7	8	9	10	11	A	12	86	81	86	86	38	30	15	17	22	39	29
7	8	9	10	A	11	12	86	78	84	85	36	33	10	18	23	41	35
8	9	10	11	A	12	A	77	81	84	85	42	31	10	19	24	43	38
8	9	10	11	12	13	14	100	97	98	98	37	47	41	23	25	48	34
8	9	10	11	12	13	14	100	97	96	97	45	50 AB	A2	24	25	49	39
8	9	10	11	12	13	14	100	89	93	93	44	50	12	24	25	49	30
8	9	10	A	11	12	13	91	94	91	91	42	47	48	24	25	49	43
6	7	A	A(P)	A(P)	A(P)	A(P)	33	56	68	89	13	22 AB	AB	09	19	28	20
7	8	9	10	11	12	A(L)	95	86	91	91	40	49	13	23	25	48	37
7	8	9	10	11	12	13	68	78	82	93	44	46	AB	23	24	47	32
6	7	A	8	9	10	A(L)	82	75	81	86	32	AB	07	10	21	31	32
8	9	10	11	12	13	14	95	86	88	88	28	AB	24	13	23	36	23
7	8	9	10	11	12	13	95	89	89	90	29	37	23	17	23	40	31
5	6	7	8	9	10	11	77	72	81	85	38	46	07	21	23	44	39
6	7	8	9	10	11	A(L)	77	69	81	86	34	42	AB	19	24	43	39
7	8	9	A(P)	A(P)	A(P)	10	73	78	84	90	31	26	AB	15	23	38	28
6	7	8	9	10	11	12	86	89	88	88	41	44	09	22	24	46	34
8	9	10	11	12	13	14	95	92	93	93	49	48	19	25	25	50	31
8	9	10	11	12	13	14	95	94	93	93	41	43	22	22	25	47	41
8	9	10	11	12	13	14	100	94	95	95	45	48	50	25	25	50	44
00	00	03	03	05	03	05	03	05	02	00	02	05	14	00	00	00	00

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ATTENDANCE

Class : VI A

Course & Code : MULTIMEDIA COMMUNICATION (BCE613A

Sl. No.	USN	NAME	10/02 5	11/02 1	12/02 4	13/02 3	18/02 1	19/02 2	19/02 E.C 3
			1	2	3	4	5	6	7
26	1SJ22EC025	BHUGANIPALLI SREE VIDYA	1	2	3	4	A	5	6
27	1SJ22EC026	BHUMIKA	A	1	2	3	4	5	6
28	1SJ22EC027	BHUVAN Y A	A	A	1	2	3	4	5
29	1SJ22EC028	CHAITHRA N S	1	2	3	4	5	6	7
30	1SJ22EC029	CHANDAN A	A	1	A	2	3	4	5
31	1SJ22EC030	CHANDAN G	A	1	2	A	3	4	5
32	1SJ22EC031	CHANDANA H S	1	2	3	4	5	6	7
33	1SJ22EC032	CHANDANA R	1	2	3	4	5	6	7
34	1SJ22EC033	CHANDANA V R	1	2	3	4	5	6	7
35	1SJ22EC034	CHANDINI T D	1	2	3	4	5	6	7
36	1SJ22EC035	CHANDU SHREE Y C	1	2	3	4	5	6	7
37	1SJ22EC036	CHETHAN S N (5)	A	1	A	2	3	4	5
38	1SJ22EC037	CHIRAG H	A	A	1	2	3	4	5
39	1SJ22EC038	D NISARGA	1	2	3	4	5	6	7
40	1SJ22EC039	DARSHAN NAYKA (2)	1	2	3	4	5	A	A
41	1SJ22EC040	DEEKSHA REDDY M	A	1	2	3	4	5	6
42	1SJ22EC041	DEEKSHITH PATEL C (2)	1	A	2	3	4	A (P)	A (P)
43	1SJ22EC042	DEEPIKA M (4)	A	A	1	2	A	3	4
44	1SJ22EC043	DEVARAJU C V (1)	1	2	A	A	3	4	5
45	1SJ22EC044	DHANUSH A AGNI (5)	A	1	2	3	A	A	A
46	1SJ22EC045	DHANUSH M (6)	A	1	2	3	A	A	A
47	1SJ22EC046	DRUTHI G A	1	2	3	4	5	6	7
48	1SJ22EC047	DUDDU SIDDARTH (3)	A	1	2	3	A (P)	A (P)	A (P)
49	1SJ22EC048	G AKANKSHA (5)	1	2	3	A	4	5	6
50	1SJ22EC049	GANAVIKA N	1	2	3	4	5	6	7
		No. of Abs.	11	04	03	03	05	05	05
		Initials	BH	BH	BH	BH	BH	BH	BH

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20/02	20/02	03/03	04/03	05/03	06/03	10/03	Attendance 2025				CIE Marks 2025				Assignment Marks	CIE Marks	SEE Marks
3	4	5	1	4	3	5	A1 26.03	A2 12.04	A3 26.05	Final 29.05	T1 (50) 25.03	T2 (50) 12.04	T3 (50) 17.05	Avg. (25)	(25)	(50)	(50)
	8	9	10	11	12	13	14										
7	8	9	10	11	12	13	86	86	91	91	43	45	28	23	25	48	25
7	8	9	10	11	12	13	91	81	86	86	35	31	20	17	25	42	32
6	7	8	9	10	11	12	86	83	88	88	39	37	19	20	25	45	40
8	9	10	11	12	A	13	91	78	86	86	36	30	13	17	25	42	33
6	7	8	9	10	11	12	86	78	86	86	45	48	12	24	25	49	33
A	A	6	7	8	9	10	77	78	86	86	48	41	AB	23	25	48	31
8	9	10	11	12	13	14	95	94	96	97	45	47	AB	24	25	49	36
8	9	10	11	12	13	14	100	100	100	100	40	50	20	23	25	48	36
8	9	10	11	12	13	14	95	94	96	97	31	39	27	18	25	43	28
8	9	A	10	11	12	13	91	94	96	97	27	49 AB	24	20	24	44	33
8	9	10	11	12	13	14	95	92	93	93	24	46 AB	25	18	25	43	43
A	A	6	7	A(L)	8	A	73	67	75	85	0A	27	16	11	19	30	25
6	7	8	9	10	11	A	73	78	84	85	39	45	12	22	24	46	38
8	9	10	11	12	13	14	91	89	93	93	37	43	AB	21	25	46	26
6	7	8	9	10	11	A	77	72	81	85	12	39	30	18	24	42	38
7	8	A	9	10	11	12	91	83	88	88	45	46	29	23	25	48	46
5	6	7	8	9	A	10	73	72	82	85	45	44	09	23	24	47	42
5	6	7	8	9	10	11(L)	77	78	81	88	29	AB	25	14	23	37	44
6	7	8	9	10	A	11	82	75	82	85	31	42	05	19	22	41	36
4	5	6	7	8	A	A(L)	73	69	75	85	AB	28	19	12	21	33	19
4	5	6	7	8	9	A(L)	77	72	77	88	18 AB	00	20	10	20	30	07
8	9	10	11	12	13	14	86	92	89	90	14	37	27	17	24	41	26
4	5	6	7	8	9	10	64	69	79	85	20	28	AB	12	23	35	14
7	8	9	10	11	12	13	91	75	82	91	46	21	27	19	25	44	40
8	9	10	11	12	13	14	100	97	98	98	31	29	13	16	25	41	21
02	02	02	00	01	04	03	05	06	00	00	05	04	11	00	00	00	02

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ATTENDANCE

Class : **VI** | **A**

Course & Code : **MULTIMEDIA COMMUNICATION (BCE 613** E·C

Sl. No.	USN	NAME	10/02	11/02	12/02	13/02	18/02	19/02	19/02
			5	1	4	3	1	2	3
			1	2	3	4	5	6	7
51	1SJ22EC050	GOKUL KUMAR B S (6)	A	A	1	2	3	4	5
52	1SJ22EC051	GOVARDHAN V K	A	1	2	A	3	4	5
53	1SJ22EC052	GOWTHAM R (5)	A	A	1	2	A	3	4
54	1SJ22EC053	GUNASHREE D S	1	2	3	4	5	6	7
55	1SJ22EC054	HAFSA KHANAM (6)	A	1	2	3	A	4	5
56	1SJ22EC055	HAMSA K S	1	2	3	4	5	6	7
57	1SJ22EC056	HARSHITH GOUDA N (8)	1	2	3	4	A(L)	5	6
58	1SJ22EC057	HARSHITH K R	1	2	3	4	5	6	7
59	1SJ22EC058	HARSHITH KUMAR A (3)	1	2	3	4	A(L)	5	6
60	1SJ22EC059	HARSHITHA J V	1	2	3	4	5	6	7
61	1SJ22EC060	HARSHITHA N	A	1	2	3	4	5	6
62	1SJ22EC061	HARSHITHA P S	1	2	3	4	5	6	7
63	1SJ22EC062	HEMANTH KUMAR H P (2)	A	A	1	2	3	4	5
64	1SJ22EC063	HITHA D (4)	1	2	3	4	A	A	A
65	1SJ22EC064	JAYANTH B S (1)	1	2	3	4	A(L)	5	6
66	1SJ23EC400	ACHHUTHA REDDY C P (7)	A	1	A	2	3	4	5
67	1SJ23EC401	CHANDRA SHEKARA M	1	A	A	2	3	4	5
68	1SJ23EC402	CHARAN KUMAR (6)	A	1	2	3	4	5	6
69	1SJ23EC403	DARSHAN H R	1	2	3	4	5	6	7
70									
71									
72									
73									
74									
75									
	No. of Abs.		08	04	02	01	06	01	01
	Initials								

18

E.C

20/02	20/02	03/03	04/03	05/03	06/03	10/03
3	4	5	1	4	3	5
8	9	10	11	12	13	14
A	A	6	7	8	A	A(L)
6	7	8	9	10	11	12
5	6	7	A(P)	A(P)	A(P)	8
8	9	10	11	12	13	14
6	7	8	9	10	11	12
8	9	10	11	12	13	14
A(P)	A(P)	7	8	A	A	A(L)
A	A	8	9	10	11	12
A(P)	A(P)	7	8	9	A	A
8	9	10	A	11	12	13
A	A	7	8	A	9	10
8	9	10	11	12	13	14
6	7	8	A	A	A	9
5	6	7	8	A	9	10
7	8	9	10	11	12	13
6	7	A	A	8	A	9
6	7	8	9	10	11	12
A(P)	A(P)	7	8	9	A	A
8	9	10	11	12	13	14
06	06	01	04	05	07	02

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Attendance				CIE Marks				Assignment Marks	CIE Marks	SEE Marks
20.03.2025 A1	12.04.2025 A2	25.05.2025 A3	29.05.2025 Final	25.03.2025 T1 (50)	12.04.2025 T2 (50)	27.05.2025 T3 (50)	Avg. (25)	(25)	(50)	
59	64	74	85	AB	18	20	10	20	30	18
86	86	91	91	33	38	23	18	25	43	28
64	67	77	86	48	AB	19	17	24	41	20
100	94	96	97	43	50	37	24	25	49	45
86	67	77	88	47	44	AB	23	21	44	29
95	92	95	95	48	42	33	23	25	48	42
59	58	70	85	18 AB	00	20	10	20	30	28
82	78	86	86	32	32	10	16	24	40	31
68	67	79	85	31	29	20	16	24	40	25
86	83	88	88	39	46	AB	22	25	47	33
77	78	86	86	40	47	15	22	25	47	24
91	78	86	86	30	33	23	16	22	38	34
73	75	82	86	40	41	AB	21	25	46	38
68	67	79	86	29	45	06	19	24	43	19
91	78	82	85	36	45	00	21	23	44	30
73	61	74	86	22	36	AB	15	23	38	26
86	92	95	95	03	30	21	13	24	37	18
68	69	77	88	09	36	22	12	21	33	29
95	94	95	95	AB	29	25	14	21	35	26
08	08	01	00	05	03	08	00	00	00	00

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ATTENDANCE

Class : ✓J | A

Course & Code : MULTIMEDIA COMMUNICATION (BEC613

Sl. No.	USN	NAME	02/04	10/04	26/04	16/05	23/05				
			7	L	5	L	7				
			1	2	3	4	5	6	7	8	9
1	1SJ22EC011	AMULYA M	1	2	A	A	3				
2	1SJ22EC036	CHETHAN S N	1	A	2	3	4				
3	1SJ22EC039	DARSHAN NAYKA	A	A	1	2	3				
4	1SJ22EC044	DHANUSH A AGNI	1	2	3	A	4				
5	1SJ22EC045	DHANUSH M	1	A	2	3	4				
6	1SJ22EC046	DRUTHI G A	1	2	A	3	A				
7	1SJ22EC050	GOKUL KUMAR B S	1	A	2	3	4				
8	1SJ22EC056	HARSHITH GOWDA N	A	1	2	A	3				
9	1SJ23EC0401	CHANDRASHEKARA M	1	2	3	A	4				
10	1SJ23EC402	CHARAN KUMAR	A	1	2	3	A				
11	1SJ23EC403	DARSHAN W R	1	2	A	3	4				
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
	No. of Abs.		03	04	03	04	02				
	Initials										

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10	11	12	13	14	15	16	17	18	Attendance				CIE Marks			CIE Marks (50)	SEE Marks (50)
									A1	A2	A3	Final	T1	T2	T3		
									32	56	68	89	13	22	AB	28	20
									73	67	75	85	04	27	16	30	25
									77	72	81	85	12	39	30	42	38
									73	69	75	85	AB	28	19	33	19
									77	72	77	88	18	00	20	30	07
									86	92	89	90	14	37	27	41	26
									59	64	74	85	AB	18	20	30	18
									59	58	70	85	18	00	20	30	28
									86	92	75	95	03	30	21	37	18
									68	69	77	88	09	36	22	33	29
									95	94	95	95	Ab	29	25	35	26

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WORK DIARY

Monday	Tuesday	Wednesday
Date : 10.02.25	Date : 11.02.25	Date : 12.02.25
11:10AM - 1:10PM V̄I A1 VLSI LAB INTRODUCTION TO LAB 2:00PM - 3:00PM V̄I A MMC BASICS OF COMPUTER NETWORKS (BRIDGE COURSE)	9:00 AM - 10:00 AM V̄I A MMC OSI & TCP/IP MODEL 2:00PM - 4:00PM V̄I A2 VLSI LAB INTRODUCTION TO LAB	12:10PM - 1:10 PM V̄I A MMC BASICS OF COMMUNICATION SYS
Date : 17.02.25	Date : 18.02.25	Date : 19.02.25
CASUAL LEAVE ALTERNATE ARRANGEMENT 11:10 AM - 1:10 PM V̄I A1 VLSI LAB PROF. SRIVANI 2:00PM - 3:00 PM V̄I A MMC Dr. VEENA. S	9:00AM - 10:00AM V̄I A MMC ORIENTATION ON OBE & SYLLABUS INTRODUCTION (ONE MINUTE PAPER) 2:00PM - 4:00PM V̄I A2 VLSI LAB INTRODUCTION TO LAB	10:00 AM - 11:00 AM 11:10 AM - 12:10PM (E.C-A1 V̄I A MMC INTRODUCTION TO MODULE-1 MULTIMEDIA INFORMATION - REPRESENTATION
Date : 24.02.25	Date : 25.02.25	Date : 26.02.25
V̄I SEMESTER STUDENTS ATTENDED HR TRAINING	V̄I SEMESTER STUDENTS ATTENDED HR TRAINING	MAHA SHIVARATHRI

WORK DIARY

Thursday	Friday	Saturday Date : 15.02.25
Date : 13.02.25	Date : 14.02.25	HOLIDAY
11:10AM - 12:10PM	CASUAL LEAVE	
VI A MMC	ALTERNATE ARRANGEMENT	
BASICS OF INFORMATION	11:10 AM - 1:10PM	**Sunday** Date : 16.02.25
THEORY & CODING	VI A3 VLSI LAB	HOLIDAY
	PROF. SRIVANI	
Date : 20.02.25	Date : 21.02.25	Saturday Date : 22.02.25
11:10 AM - 12:10PM	VI SEMESTER STUDENTS	MAHA KUMBABHISHEKHA
12:10PM - 1:10 PM (E.C-VLSI)	ATTENDED HR TRAINING	A1 SRI VEERANJANEYA
VI A MMC		- SWAMY TEMPLE
MULTIMEDIA NETWORKS		**Sunday** Date : 23.02.25
		VI SEMESTER STUDENTS
		ATTENDED HR TRAINING
Date : 27.02.25	Date : 28.02.25	Saturday Date : 01.03.25
VI SEMESTER STUDENTS	VI SEMESTER STUDENTS	HOLIDAY
ATTENDED HR TRAINING	ATTENDED HR TRAINING	
		Sunday Date : 02.03.25
		HOLIDAY

WORK DIARY

Monday	Tuesday	Wednesday
Date : 03.03.25	Date : 04.03.25	Date : 05.03.25
11:10 AM - 1:10 PM $\overline{VI}$ A1 VLSI LAB 4-BIT ADDER 2:00PM - 3:00PM $\overline{VI}$ A MMC MULTIMEDIA APPLICATIONS	9:00AM - 10:00AM $\overline{VI}$ A MMC INTERACTIVE & ENTERTAINMENT APPLICATIONS 2:00PM - 4:00PM $\overline{VI}$ A2 VLSI LAB 4-BIT ADDER	12:10PM - 1:10PM $\overline{VI}$ A MMC MEDIA TYPES, COMMUNICATION MODES, NETWORK TYPES & MULTIPOINT CONFERENCING (THINK PAIR SHARE ACTIVITY ON MULTIMEDIA)
Date : 10.03.25	Date : 11.03.25	Date : 12.03.25
11:10 AM - 1:10 PM $\overline{VI}$ A1 VLSI LAB 4-BIT SHIFT MULTIPLEXER 2:00PM - 3:00PM $\overline{VI}$ A MMC INTRODUCTION TO MODULE-2	9:00AM - 10:00AM $\overline{VI}$ A MMC DIGITIZATION PRINCIPLES 2:00PM - 4:00PM $\overline{VI}$ A2 VLSI LAB 4-BIT SHIFT MULTIPLEXER	12:10PM - 1:10PM $\overline{VI}$ A MMC TEXT REPRESENTATION
Date : 17.03.25	Date : 18.03.25	Date : 19.03.25
11:10 AM - 1:10 PM $\overline{VI}$ A1 VLSI LAB 32-BIT ALU 2:00PM - 3:00PM 3:00PM - 4:00PM (E.C.- IKS) $\overline{VI}$ A MMC DIGITIZED PICTURES AUDIO REPRESENTATION	9:00AM - 10:00AM $\overline{VI}$ A MMC VIDEO REPRESENTATION 2:00PM - 4:00PM $\overline{VI}$ A2 VLSI LAB 32-BIT ALU	12:10PM - 1:10PM $\overline{VI}$ A MMC HDTV FORMATS

WORK DIARY

Thursday	Friday	Saturday Date : 08.03.25
Date : 06.03.25	Date : 07.03.25	CONDUCTED A ONE DAY WORKSHOP ON "DEMYSTIFYING AI FROM ML FOUNDATIONS TO REAL-WORLD APPLICATIONS" FOR 4th SEMESTER STUDENTS
11:10 AM - 12:10 PM VI A MMC NETWORK & APPLICATION QUALITY OF SERVICES	12:10PM - 1:10PM VI A3 VLSI LAB INTRODUCTION TO LAB 1:10PM - 4:00PM SPECIAL CASUAL LEAVE	**Sunday Date : 09.03.25** HOLIDAY
Date : 13.03.25	Date : 14.03.25	Saturday Date : 15.03.25
9:00AM - 10:00AM VI A MMC TEXT & IMAGE REPRESENTATION	12:10PM - 1:10PM VI A3 VLSI LAB 4-BIT ADDER & 4-BIT SHIFT MULTIPLEXER	HOLIDAY **Sunday Date : 16.03.25** HOLIDAY
Date : 20.03.25	Date : 21.03.25	Saturday Date : 22.03.25
11:10 AM - 12:10PM VI A MMC REVISION	12:10PM - 1:10PM VI A3 VLSI LAB 32-BIT ALU	SPECIAL CASUAL LEAVE **Sunday Date : 23.03.25** HOLIDAY

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WORK DIARY

Monday	Tuesday	Wednesday
Date : 24.03.25	Date : 25.03.25	Date : 26.03.25
CIE - 1	CIE - 1	CIE - 1
Date : 31.03.25	Date : 01.04.25	Date : 02.04.25
RAMZAN	9:00 AM - 10:00 AM $\overline{VI}$ A MMC TEXT COMPRESSION 2:00 PM - 4:00 PM $\overline{VI}$ A2 VLSI LAB FLIP-FLOPS	12:10 PM - 1:10 PM $\overline{VI}$ A MMC DYNAMIC HUFFMAN CODING (PEER TEACHING) CB 2/4/25 4:00 PM - 5:00 PM $\overline{VI}$ A MMC REMEDIAL CLASS REVISION ON MODULE 1 & 2
Date : 07.04.25	Date : 08.04.25	Date : 09.04.25
11:10 AM - 1:10 PM $\overline{VI}$ A1 VLSI LAB FLIP-FLOPS 3:00 PM - 4:00 PM $\overline{VI}$ A MMC DPCM , ADPCM	9:00 AM - 10:00 AM $\overline{VI}$ A MMC ADAPTIVE PREDICTIVE CODING, LINEAR PREDICTIVE CODING 2:00 PM - 4:00 PM $\overline{VI}$ A2 VLSI LAB 4-BIT MODN COUNTER	12:10 PM - 1:10 PM $\overline{VI}$ A MMC CODE- EXCITED LPC , MPEG AUDIO CODERS , DOLBY AUDIO CODERS

WORK DIARY

Thursday	Friday	Saturday MONDAY TIMETABLE Date : 29.03.25
Date : 27.03.25	Date : 28.03.25	10:00AM - 11:00AM (E.C - 1A2)
11:10 AM - 12:10PM	12:10 PM - 1:10 PM	VI A MMC
VI A MMC	VI A3 VLSI LAB	COMPRESSION PRINCIPLES
INTRODUCTION To MODULE-3	FLIP-FLOPS	11:10 AM - 1:10 PM
(QUIZ ON MODULE-2)		VI A1 VLSI LAB
		REVISION
		2:00PM - 3:00PM
		VI A MMC
		SOURCE ENCODING
		Sunday Date : 30.03.25
		HOLIDAY
Date : 03.04.25	Date : 04.04.25	**Saturday** TUESDAY TIME-TABLE Date : 05-04-25
11:10 AM - 12:10 PM	9:00 AM - 10:00 AM	9:00AM - 10:00 AM
12:10 PM - 1:10 PM (E.C - VLSI)	VI C ESD IN1 LAB	VI A MMC
VI A MMC	ALP To FIND NUMBER OF 1's & 0's IN A GIVEN NUMBER	JPEG ENCODER & DECODER
ARITHMETIC CODING	11:30 AM - 1:30 PM	2:00PM - 4:00 PM
IMAGE COMPRESSION	VI A3 VLSI LAB	VI A2 VLSI LAB
	4 - BIT MOD N-N COUNTER	**Sunday** WEDNESDAY TIME-TABLE Date : 06.04.25
		12:10 PM - 1:10 PM
		VI A MMC
		INTRODUCTION To MODULE-4
Date : 10.04.25	Date : 11.04.25	**Saturday** Date : 12.04.25
11:10 AM - 12:10PM		9:45 AM - 10:30 AM (E.C VLSI)
VI A MMC	ADHIRA - 2K25	VI A MMC
PROBLEMS ON HUFFMAN CODING,	(TECHNICAL FEST)	REVISION
ARITHMETIC CODING, LZ &		**Sunday** Date : 13.04.25
LZW CODING		
(TAPPS ACTIVITY)		
1:30PM - 2:00PM		HOLIDAY
VI A MMC REMEDIAL CLASS		
PROBLEMS ON HUFFMAN CODING		

WORK DIARY

Monday	Tuesday	Wednesday
Date : 14.04.25	Date : 15.04.25	Date : 16.04.25
AMBEDKAR JAYANTHI	LINK HOLIDAY	CET EXAM
Date : 21.04.25	Date : 22.04.25	Date : 23.04.25
CIE - 2 9:30AM - 11:00AM INVIGILATION DUTY IN 306 ROOM	CIE - 2 2:00PM - 3:30PM INVIGILATION DUTY IN ECE SEMINAR HALL	CIE - 2
Date : 28.04.25	Date : 29.04.25	Date : 30.04.25
3rd IEEE ICKECS	3rd IEEE ICKECS & SAMBHRAMA - 2K25	SAMBHRAMA - 2K25

WORK DIARY

Thursday	Friday	Saturday Date: 19.04.25
Date: 17.04.25	Date: 18.04.25	HOLIDAY
CE1 EXAM	GOOD FRIDAY	**Sunday Date: 20.04.25** HOLIDAY

Date: 24.04.25	Date: 25.04.25	Saturday Date: 26.04.25

11:10 AM - 12:10 PM
 	
$\overline{VI}$ A MMC
 	
H.261 VIDEO COMPRESSION
 	
STANDARD
	9:00AM - 10:00AM
	$\overline{VI}$ C ESD INT LAB
	CMOS INVERTER
	10:00AM - 11:00AM (EC-
	           IA2)
	$\overline{VI}$ A MMC
	H.263 VIDEO COMPRESSION
	STANDARD
	11:10 AM - 1:10 PM
	$\overline{VI}$ A3 VLS1 LAB
	CMOS INVERTER
		9:00 AM - 10:00 AM (EC-
		             ESD)
		$\overline{VI}$ A MMC
		VIDEO COMPRESSION -
		COMPRESSION PRINCIPLES
		2:00PM - 3:00PM
		$\overline{VI}$ A MMC REMEDIAL CLASS
		Sunday Date: 27.04.25
		PROBLEMS ON LZ & LZW CODING
		
		HOLIDAY

Date: 01.05.25	Date: 02.05.25	Saturday Date: 03.05.25
MAY DAY	9:00AM - 11:00 AM $\overline{VI}$ C ESD INT LAB TWO GENERATE SQUARE & TRIANGULAR WAVE USING DAC 11:10 AM - 1:10 PM $\overline{VI}$ A3 VLS1 LAB TWO INPUT NOR GATE *CR signature*	CASUAL LEAVE
		Sunday Date: 04.05.25 HOLIDAY

WORK DIARY

Monday	Tuesday	Wednesday
(Timetable change)		
Date : 05.05.25	Date : 06.05.25	Date : 07.05.25
10:00 AM - 11:00 AM (E.C CLAN)	1:50 PM - 2:40 PM	
V̄I A MMC	V̄I A MMC	
INTRODUCTION TO MODULE-5	ETHERNET	No CLASSES
2:40 PM - 3:30 PM	2:45 PM - 4:30 PM	
V̄I A MMC	V̄I A1 VLSI LAB	
LOCAL AREA NETWORKS	4-BIT MOD N COUNTER	
Date : 12.05.25	Date : 13.05.25	Date : 14.05.25
2:40 PM - 3:30 PM	1:50 PM - 2:40 PM	
3:30 PM - 4:30 PM (E.C VLSI)	V̄I A MMC	
V̄I A MMC	ETHERNET FRAME FORMAT & OPERATIONAL PARAMETERS	No CLASSES
VIDEO COMPRESSION : MPEG TOKEN RING	2:45 PM - 4:30 PM	
(FLIPPED CLASS ACTIVITY)	V̄I A1 VLSI LAB	
	CMOS INVERTER	
Date : 19.05.25	Date : 20.05.25	Date : 21.05.25
1:50 PM - 2:40 PM (E.C VLSI)	1:50 PM - 2:40 PM	1:50 PM - 4:30 PM (E.C)
2:40 PM - 3:30 PM	V̄I A MMC	V̄I A MMC
3:30 PM - 4:30 PM (E.C VLSI)	MULTIMEDIA USING PYTHON	MULTIMEDIA USING PYTHON
V̄I A MMC	(MINI-PROJECT PRESENTATION)	(MINI-PROJECT PRESENTATION)
BRIDGES, FDDI, REVISION		

WORK DIARY

Thursday	Friday	Saturday Date: 10·05·25
Date: 08·05·25	Date: 09·05·25	2:00PM - 4:00PM ATTENDED A WORKSHOP ON "STRESS FREE TEACHING" BY Mr.RAJESH
1:00PM - 2:40PM $\overline{VI}$ A MMC SEMINAR ON "FROM STUDENT TO AUTHOR LEAR HOW TO WRITE AN IEEE PAPER" (NDLI CLUB EVENT)	9:00AM - 10:30AM $\overline{VI}$ C ESD INT LAB CONDUCTED LAB INTERNALS-1 10:40AM - 11:30AM ATTENDED AAVISHKAAR-25 PROJECT EXHIBITION INAUGURAL FUNCTION, ECE SEMINAR HALL	
		Sunday Date: 11·05·25
2:40PM - 4:30PM $\overline{VI}$ A2 VLSI LAB TWO INPUT NOR GATE	12:00PM - 3:00PM INTERNAL JURY FOR PROJECT EXHIBITION	HOLIDAY
Date: 15·05·25	Date: 16·05·25	Saturday Date: 17·05·25
1:00PM - 1:50PM $\overline{VI}$ A MMC TOKEN RING FRAME TRANSMISSION & RECEPTION	9:00AM - 11:00AM $\overline{VI}$ C ESD INT LAB THEORY CLASSES WERE TAKEN 1:30PM - 2:00PM	HOLIDAY
		Sunday Date: 18·05·25
2:00PM - 4:30PM $\overline{VI}$ A2 VLSI LAB BOOLEAN EXPRESSIONS	$\overline{VI}$ A MMC REMEDIAL CLASS DISCUSSED PREVIOUS YEAR UNIVERSITY QUESTION PAPERS QUESTIONS ON MODULE-4	HOLIDAY
Date: 22·05·25	Date: 23·05·25	Saturday Date: 24·05·25
1:00PM - 1:50PM $\overline{VI}$ A MMC MODULE-5 (ROUND ROBIN DISCUSSION ACTIVITY)	1:00PM - 1:50PM (E·C) $\overline{VI}$ A MMC MULTIMEDIA USING PYTHON (MINI-PROJECT PRESENTATION)	No CLASSES
		Sunday Date: 25·05·25
2:40PM - 4:30PM $\overline{VI}$ A2 VLSI LAB COMMON SOURCE AMPLIFIER	4:00PM - 5:00PM $\overline{VI}$ A MMC REMEDIAL CLASS DISCUSSED PREVIOUS YEARS VTU QPS QUESTIONS OF MODULE-5	HOLIDAY

WORK DIARY

Monday	Tuesday	Wednesday
Date : 26.05.25	Date : 27.05.25	Date : 28.05.25
CIE - 3	CIE - 3 2:00PM - 3:30PM INVIGILATION DUTY IN 306 ROOM	CIE - 3
Date :	Date :	Date :
Date :	Date :	Date :

WORK DIARY

Thursday	Friday	Saturday Date : 31.05.25
Date : 29.05.25	Date : 30.05.25	9:00AM - 4:00PM
9:00AM - 10:00AM	9:00AM - 10:00AM	VI A MMC
VI A MMC	VI C ESD IN1 LAB	FINALIZATION OF
DISCUSSED MODEL QP's	PRACTICE LAB	C1E MARKS
		SYLLABUS COVERED IS 100-/.
	11:10AM - 1:10PM	Sunday Date :
	VI A2 VLS1 LAB	
	PRACTICE LAB	
Date :	Date :	Saturday Date :
		Sunday Date :
Date :	Date :	Saturday Date :
		Sunday Date :

TEACHER APPRAISAL BY STUDENTS

Course	Class / Sec.	Total Students Participated	A	%	B	%	C	%	D	%	Total Points
MULTIMEDIA COMMUNICATION	VI / A	46	331	72	121	26	08	1.7	00	00	452 (98.3%)

Additional Responsibilities :

1. IQAC CONVENER
2. AICTE MARGADARSHAN SCHEME CONVENER
3. ACADEMIC AUDIT COORDINATOR
4. NDLI CLUB MEMBER

5. PAC MEMBER
6. DEPARTMENT COUNCIL MEETING CONVENER
7. RANK MONITORING COMMITTEE COORDINATOR
8. B.E (HONS) COORDINATOR
9. PROCTOR FOR 4TH AI
10. NBA CRITERION-2 - COORDINATOR

Paper Presentation Details :

1. PRESENTED A PAPER TITLED "IMPLEMENTATION OF AUTOMATED SOLAR POWERED BATTERY CHARGING SYSTEM FOR EVs WITH IOT INTEGRATION" IN ICKECS-2025 ON 28.04.25.

2. PUBLISHED A PAPER TITLED "EVALUATING BER AND THROUGHPUT IN 5G NETWORKS USING ADAPTIVE MODULATION AND NAKAGAMI FADING" IN JOURNAL OF INFORMATION SYSTEMS ENGINEERING AND MANAGEMENT, APRIL 2025 (SCOUPUS INDEXED Q3 JOURNAL)

Training / Workshop / Seminar Attended Details :

1. ATTENDED FDP ON "AI MASTERY FOR EDUCATORS", ORGANIZED BY VISHLESAN i-HUB IIT PATNA FROM 15TH MAY 2025 TO 7TH JUNE 2025.

2. ATTENDED FIVE DAY ONLINE FDP ON "FUNDAMENTALS & ADVANCED PROPULSION TECHNIQUES FOR SPACE EXPLORATIONS", ORGANIZED BY DEPARTMENT OF AEROSPACE - ENGINEERING, SICI FROM 24TH TO 28TH FEBRUARY 2025.

3. ATTENDED 5 DAYS NATIONAL LEVEL FDP ON "EMERGING TRENDS IN IMAGE PROCESSING USING AI", ORGANIZED BY DEPT. OF ECE, SJMIT, CHITRADURGA FROM 17TH TO 21ST - FEBRUARY 2025.

Date : 17.06.2025

Sign. of the Staff

HOD Remarks : Very Good Try to Publis Paper in Q,

Sign. of the HOD 17/06/25

RESULT ABSTRACT

Period : From ...10..02..2025.......... To ....31..05..2025..........

Course Title & Code

DATA	MULTIMEDIA – COMMUNICATION (BEC613A)				
No. of Students Appeared	69				
Absentees	NIL				
First Class with Distinctions	46				
First Class	12				
Second Class	07				
Pass	02				
Fail	02				
% of Pass	97.10				

22/07/2025
Sign. of the Staff

22/07/25
Sign. of the HOD

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LEADE DETAILS

Sl. No.	Date	Type	Reason
1.	14.02.2025	CASUAL LEAVE	PERSONAL WORK
2.	17.02.2025	CASUAL LEAVE	PERSONAL WORK
3.	07.03.2025	OOD (HALF-DAY: AN)	TO MEET Dr. GURURAJ KARAJAGI (MENTORSHIP)
4.	22.03.2025	SPECIAL CASUAL LEAVE	NPTEL EXAM
5.	03.05.2025	CASUAL LEAVE	PERSONAL WORK

31/05/2025

Sign. of the Staff

TIME TABLE

Time	1 9.00 AM to 10.00 AM	2 10.00 AM 11.00 AM	3 11.10 AM 12.10 PM	4 12.10 PM 1.10 PM	5 2.00 PM 3.00 PM	6 3.00 PM 4.00 PM	4.00 PM 5.00 PM
MONDAY			← V8 A1 VLSI LAB →		MMC		
TUESDAY	MMC				← V8 A2 VLSI LAB →		
WEDNESDAY				MMC			MMC
THURSDAY			MMC				
FRIDAY	← V1 C ESD INT LAB →	← V8 A3 VLSI LAB →					
SATURDAY							

Department : Vision & Mission

Aeronautical Engineering

Vision : Preparing Competent Aeronautical Engineers To Serve the Society

Mission : • Strengthening the Fundamental concepts in Aeronautical Engineering.
  • Building Analytical ability among students with innovative problem-solving techniques.
  • Training students in multidisciplinary research areas in collaboration with Industries embedding the culture of continuous learning.
  • Imparting skillset in line with emerging industrial needs with leadership qualities
  • Making students responsible citizens to serve society with ethics and values.

Civil Engineering

Vision   : Building Competent Civil Engineers with a Societal Perspective

Mission : • Providing Conducive Learning Environment focusing on Planning, Analysis, Design and Detailing of Sustainable Infrastructure
  • Imparting Training, Research and Consultancy in Collaboration with Research Institutes and Industries
  • Equipping Students with Employability Skills through Internships, Industrial Interactions and Field Visits
  • Exploring Comprehensive Environmental Aware Solutions for Various Fields of Civil Engineering with Multidisciplinary Approach
  • Imbibing Lifelong Learning, Professionalism and Ethics among Civil Engineering Students

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)
"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ–೫೯೦೦೧೮, ಕರ್ನಾಟಕ, ಭಾರತ

Visvesvaraya Technological University
(State University of Government of Karnataka Established as per the VTU Act, 1994)
"Jnana Sangama" Belagavi-590018, Karnataka, India

Ref.No : VTU/ RO/ Pract/ 2024-2025/   Date : **04 JUL 2025**

STRICTLY CONFIDENTIAL

To,

DR. S BHARGAVI,

 S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR ,

 9972428675.

Respected Sir/Madam,

Subject : **Appointment as an examiner for Practical Examination.**

By direction of the Vice-Chancellor, I am to inform you that, you are appointed as an Examiner in the Practical Examination as indicated Below. The Practical Examinations are to be conducted as per the scheme of examination and jointly with the Co-Examiner. **JUNE-JULY 2025 Examination**

Serial No	Exam Centre	Semester	Subject Code	Subject Name	Exam Date	Exam Time	Batch Number	No. of Candidates	Name of the Co-Examiner
1	S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR (*Internal*)	8	21INT82	Research Internship/ Industry Internship	28-05-2025	08:30 to 11:30 11:30 to 02:30 02:30 to 05:30	4,5,6	10,10,10	MR..BOBAN MATHEWS [8904139976]

I request you to accept this assignment. In case, you are unable to accept the same, kindly intimate to the Special Officer / BOE Co-ordinator of respective regions without fail and well in advance.

Appointed By,

 DR. JAGADEESH H S,

 ATRIA INSTITUTE OF TECHNOLOGY ANAND NAGAR ,

 9480101286.

Your Faithfully

Registrar(Evaluation)

Compose

Mail

☐   Inbox   1

Chat   ☆   Starred

       ⏰   Snoozed

Meet   ▷   Sent

       ☐   Drafts   3

       ∨   More

Labels

←   🗄   ⓘ   🗑   ✉   🕐   ✅   📥   ▢   ⦂

Question Paper setting for the M.Tech Examinations of April 2025 - Reg.   Inbox ×

🖨   ☒

Controller of Examination Question Pape...   Mar 26, 2025, 4:18 PM

to Controller, bcc: me

Dear Sir/Madam,

      With respect to the above subject, we are happy to inform you that your name has been included in the Panel of Examiners for preparing the question paper for the academic year 2024-25.

      In this regard, I request you to please prepare 1 (one) set of question paper (Softcopy) with the Scheme and Solution for the following course as per the format and send it across to the undersigned through return mail by **3ʳᵈ April 2025**.

      Do confirm the acceptance by mail to **coe.qp@sjcit.ac.in**. If you can't accept this assignment, request you to inform the same through mail immediately.

Kindly download the Question Paper setting instructions, Question Paper template, Scheme template, Declaration template, Remuneration format and blooms taxonomy from the below link.

https://drive.google.com/drive/folders/

Ref.No/VTU/Exam/2024-2025/1702 <u>STRICTLY CONFIDENTIAL</u>   Date : 24-03-2025

DR.S BHARGAVI,Department of EC,   S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR
Sir/Madam,

        Sub : Appointment as paper setter for **JUNE - JULY 2025 EXAMINATIONS.**
By the direction of the Vice-Chancellor, I am pleased to appoint you as paper setter for the subject with details as
under. **You are requested to accept the assignment.**

Exam: B.E / B.Tech	**Course / Branch:** EC
Sem: 6	**Subject Name:** Multimedia Communication
Subject Code: BEC613A	**No. of sets:** 1 **To be submitted before:** 18-04-2025

INSTRUCTIONS TO PAPER SETTERS

- **Question Paper is need to be set as per OBE format by mentioning Bloom's Levels, CO's / PO's levels, else the question paper is liable for rejection. Kindly refer to syllabus**
- **This appointment is assigned a unique ID represented by the barcode accompanied by the ID in human readable form. The first page of the manuscript cannot be used for a different subject or by a different faculty member. In case you have to use a different first page, write the appointment ID by hand prominently.**
- **Typed manuscript / scheme will not be accepted. Please write down the questions LEGIBLY.**
- Use only 'generally accepted' short forms. (It is difficult to decipher 'S.T.' as 'Show that'.)
- **Kindly make sure that all Set Questions are from Syllabus enclosed with prescribed question paper pattern.**
- **The Question Paper Setter and Scrutiniser will be liable for Out of Syllabus Questions in the Set Question Paper.**
- Provide neat sketches as these figures are scanned directly from the manuscript for final printing. Sketches should be drawn in black ink only.
- Explicitly indicate the figure numbers. For example, identify the figure pertaining to Q 2(c) as Fig. Q2 (c) immediately adjacent to it.
- **Whenever problems are included, make sure to give all the relevant data from the data handbook, to avoid the issue of handbooks / tables / charts etc..**
- However, if special charts, data book are required to be given, please explicitly mention the same, in the ' Instruction to the candidates', at top of the Q.P.
- Scrupulously scrutinize the question paper for its completeness (subjectcode, subject title & clarity), missing data / figure / marks allocated / repetition of entire question or part thereof & out of syllabus questions. Read the question paper meticulously and seal it in the appropriate barcode cover enclosed, before sending it to the university.
- Furnish the scheme & solutions, in the enclosed sheet meant for it & seal it in the appropriate cover. Indicate boldly the final answers for all numerical problems.
- A question paper **without "Scheme & Solution" is liable for rejection.**
- **Ensure that the manuscript of the question paper, along with scheme & solution, reaches the undersigned, by Registered post on or before the expiry of the date mentioned above.**
- **Ensure that you personally destroy the rough draft & other material used to prepare the manuscript. No part of the manuscript or the full version should be retained in any form.**
- In case, you are unable to accept the assignment, please return all enclosures to the undersigned by return of post, with valid reasons for not accepting it.
    Thanking You,

                                                                        Yours sincerely,

                                                                        Registrar (Evaluation)

Encls:
1.Copy of the syllabus.
3.Inner cover for the manuscript.
5.Inner cover for the scheme & solution.
7.Scheme & solution sheet.

2.Manuscript sheets
4.Outer barcode cover for QP manuscript & scheme.
6.Remuneration bill.

విశ్వేశ్వరయ్య తాంత్రిక విశ్వవిద్యాలయ

("వి ಟಿ ಯు ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)

"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ–೫೯೦೦೧೮, ಕರ್ನಾಟಕ, ಭಾರತ

Visvesvaraya Technological University

(State University of Government of Karnataka Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India

Ref.No : VTU/ RO/ Pract/ 2024-2025/   Date : **10 MAR 2025**

STRICTLY CONFIDENTIAL

To,

DR. S BHARGAVI,

S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR ,

9972428675.

Respected Sir/Madam,

Subject : **Appointment as an examiner for Practical Examination.**

By direction of the Vice-Chancellor, I am to inform you that, you are appointed as an Examiner in the Practical Examination as indicated Below. The Practical Examinations are to be conducted as per the scheme of examination and jointly with the Co-Examiner. **DEC-JAN 2025 Examination**

Serial No	Exam Centre	Semester	Subject Code	Subject Name	Exam Date	Exam Time	Batch Number	No. of Candidates	Name of the Co-Examiner
1	S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR *(External)*	3	BECL358E	Typesetting using LaTeX	26-12-2024	08:30 to 11:30 11:30 to 02:30 02:30 to 05:30	15,16,17	11,12,12	DR..P SUDIR [9844383890]
2	S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR *(External)*	3	BECL358E	Typesetting using LaTeX	04-01-2025	08:30 to 11:30 11:30 to 02:30 02:30 to 05:30	12,13,14	12,12,12	DR..P SUDIR [9844383890]
3	S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR *(Internal)*	7	21ECP76	Project Work	11-03-2025	08:30 to 11:30 11:30 to 02:30 02:30 to 05:30	4,5,6	11,12,12	DR..G SHASHIBHUSHAN [9945867762]
4	S.J.C. INSTITUTE OF TECHNOLOGY CHICKBALLAPUR *(Internal)*	7	21ECP76	Project Work	12-03-2025	08:30 to 11:30 11:30 to 02:30 02:30 to 05:30	10,11,12	11,11,12	DR..G SHASHIBHUSHAN [9945867762]

I request you to accept this assignment. In case, you are unable to accept the same, kindly intimate to the Special Officer / BOE Co-ordinator of respective regions without fail and well in advance.

Appointed By,

DR. G R POORNIMA,
SRI VENKATESHWARA COLLEGE OF ENGINEERING BANGALORE ,
9886753829.

Your Faithfully

Registrar(Evaluation)

|| JAI SRI GURUDEV ||

SRI ADICHUNCHANAGIRI SHIKSHANA TRUST (R)
S J C INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR - 562 101
(CIE)

CONTINUOUS INTERNAL EVALUATION BOOKLET

UNIVERSITY SEAT NUMBER: 1 S J 2 2 E C 0 2 4

Student Name : Bhoomika . G .... Branch ...... ECE

Semester & Section 6th sem 'A' Subject ...... MMC ...... Subject Code BEC613A

CIE - I				
Date :	2 5 0 3 2 5			
Student Sign	Bhumika			
Invigilator Sign	M.fN 25/3			

Marks Awarded for CIE - I

	a	b	c	d	Total
1	—	—	—	—	—
2	08	—	—	—	08
3	—	—	—	—	—
4	07	—	—	—	07
5	—	—	—	—	—
6	10	—	—	—	10
7	07	03	—	—	10
8	—	—	—	—	—
9	06	04	—	—	10
10	—	—	—	—	—

MCQS-07/10   Bhoomika.G

CIE - II				
Date :	2 2 0 4 2 5			
Student Sign	Bhoomika.G			
Invigilator Sign	M			

Marks Awarded for CIE - II

	a	b	c	d	Total
1	10	—	—	—	10
2	—	—	—	—	—
3	10	—	—	—	10
4	—	—	—	—	—
5	10	—	—	—	10
6	10	—	—	—	10 (Extra)
7	10	—	—	—	10
8	—	—	—	—	—
9	—	—	—	—	—
10	08	—	—	—	08

MCQS-07/10   Bhoomika.G

CIE - III				
Date :	2 7 0 5 2 5			
Student Sign	Bhoomika.G			
Invigilator Sign	Mal			

Marks Awarded for CIE - III

	a	b	c	d	Total
1	10	—	—	—	10
2	—	—	—	—	—
3	—	—	—	—	—
4	10	—	—	—	10
5	—	—	—	—	—
6	10	—	—	—	10
7	—	—	—	—	—
8	10	—	—	—	10
9	—	—	—	—	—
10	10	—	—	—	10

Bhoomika.G

Marks Obtained in CIE - I	45|50 -23|25	
Assignment Marks	10|10	
Subject Staff Sign	KH 26/03/25	

ASSIGNMEN — 10/10

Marks Obtained in CIE - II	48|50 -24|25	
Assignment Marks	10|10	
Subject Staff Sign	KH 22/04/25	

MINI-PROJECT — 10/10

Marks Obtained in CIE - III	50|50 25|25	
Assignment Marks	05|05	
Subject Staff Sign	KH 29/05/25	

MCQS- 05L05

Average CIE Marks	25|25

Average Assignment Marks	25|25

FINAL CIE Marks	50|50

Bhoomika.G

VISION : SJCIT IS COMMITTED TO QUALITY EDUCATION, TRAINING AND RESEARCH
MISSION :
AUGMENTING THE SUPPLY OF COMPETENT ENGINEERS AND MANAGERS
BUILDING ENGINEERS AND MANAGERS WITH VALUE, VISION AND VERSATILITY
DEVELOPING AND DISSEMINATION OF NEW KNOWLEDGE AND INSIGHTS.

INSTRUCTIONS TO THE STUDENTS

1. USE BLACK BALL POINT PEN ONLY.

Signature of Staff with Date   Signature of HOD with Date

CIE - I

2)

analog access circuit

networking television.

Radio access

digital connection circuit
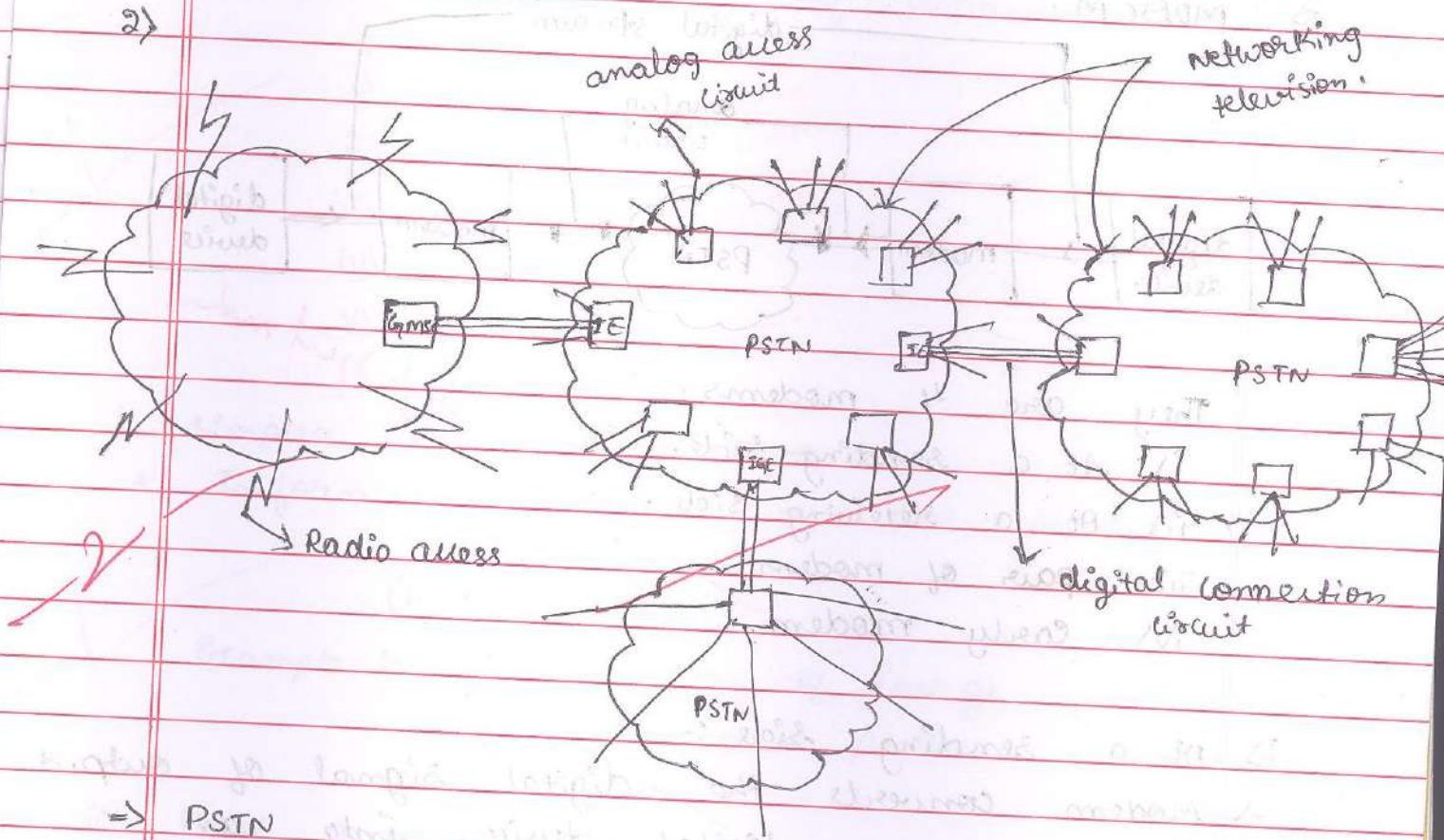
PSTN

=> PSTN

* stands for public switching telephone network.
* In early it is also known as POTs (public old telephone service).
* LE :-) Stands for local exchange
* This local exchange communicate or connected with the home or small business and it is nearest to the PSTN of LE's.
* PBX :- public broad exchange
* This exchange used to connected in a medium of PSTN as public board exchange.
* GMSC → Gateway multiservice circuit.
* IGE → International Gateway exchange.
* Exchanging the networks b/w other countries.

6) They are 5 types of communication modes :-

    i) Simplex mode
    ii) Half duplex
    iii) Duplex (full)
    iv) broadcast
    v) multicast.

i) Simplex communication mode :-
* Information flows in one direction only.

A ⟶ B

Example :- Transmission of image from deep space probe.

ii) Half duplex :-
* It is two - way alternatively.
* Information flows in both direction, but alternatively.
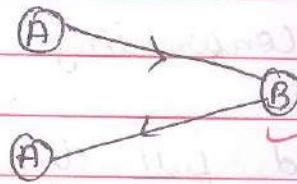
Example :- remote server.

iii) full duplex :-
* It is two - way simultaneously.
* Information flows in both direction, but simultaneously.

A ⇄ B

Example :- video telephony.

5

*) packed mode.
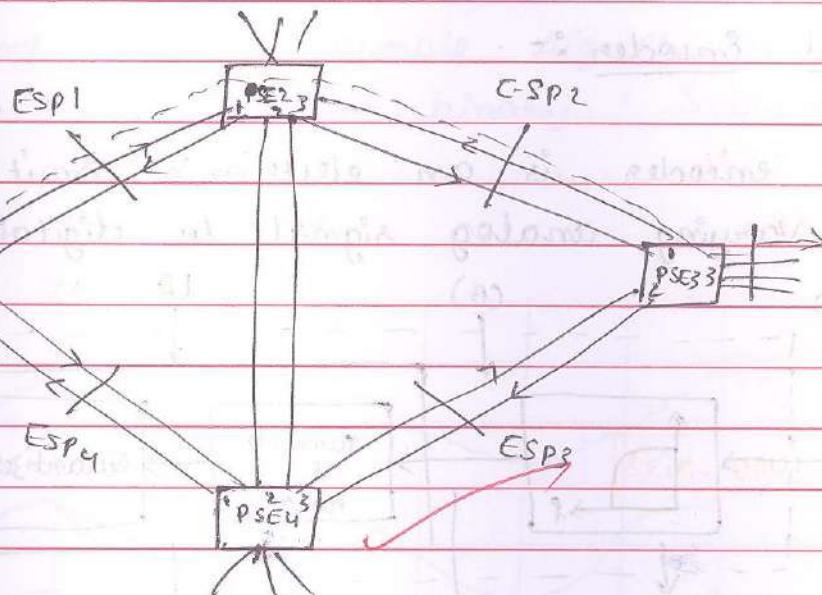
* It is asynchronous communication mode.
* It varies time dependent.
* It is also connected through a analog/digital access circuit only.
* It has large numbers of networks through a multimedia communication.

=> multiple choice

1) multimedia.
2) 5
3) Integrated service digital network
4) Hyperlinks
5) Nodes. ✗ Links
6) Half-duplex.
7) Singal Encoder.
8) H3   Hz / sps
9) TIFF   ✗ SRGP
10) pixel depth.   ENP

07/10

45/50

LH
24/03/2020

13

1. **Signal Encoder :-.**

* Signal encoder is an electronic circuit converts time varying analog signal to digital form.
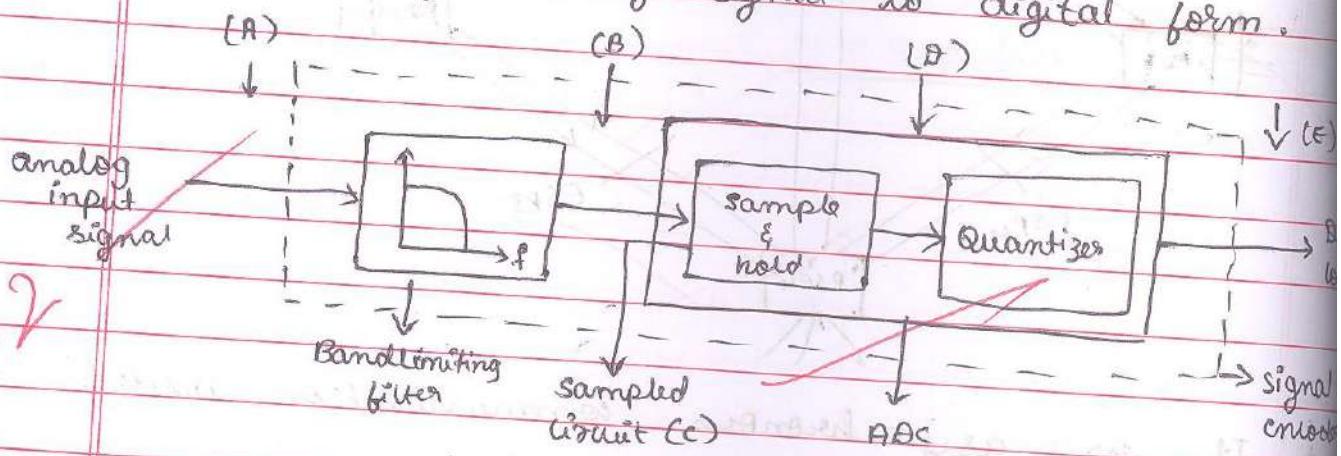
* The principles of signal encoder have 2 main circ
    i) Bandlimiting filter
    ii) Analog to digital converter.
        ↓ 2 components.
            a) sample & hold circuit
            b) Quantizer.

* <u>Bandlimiting filter</u> :- remove selected higher frequency component from source signal (A).

* <u>Sample and hold</u> :- got output from bandlimiting fil (B) signal used in sample amplitude of the filtered signal at regular time intervals (c) an hold the sample amplitude constant between sample (D) signal, Quantizer got output from signal (D) which converts each sample amplitu into binary value known as <u>codeword</u>. like signal

field 2 scan odd lines

field 1 scan

525	625
↓	↓
1	1
2	3
23	25
24	26

625	525
↓	↓
1'	1'
2'	2'

visible one

1st field retrace.

2nd field retrace.

Visible

262	312
263	313

312'	262'
313'	263'

→ odd scan lines.

→ even scan lines.
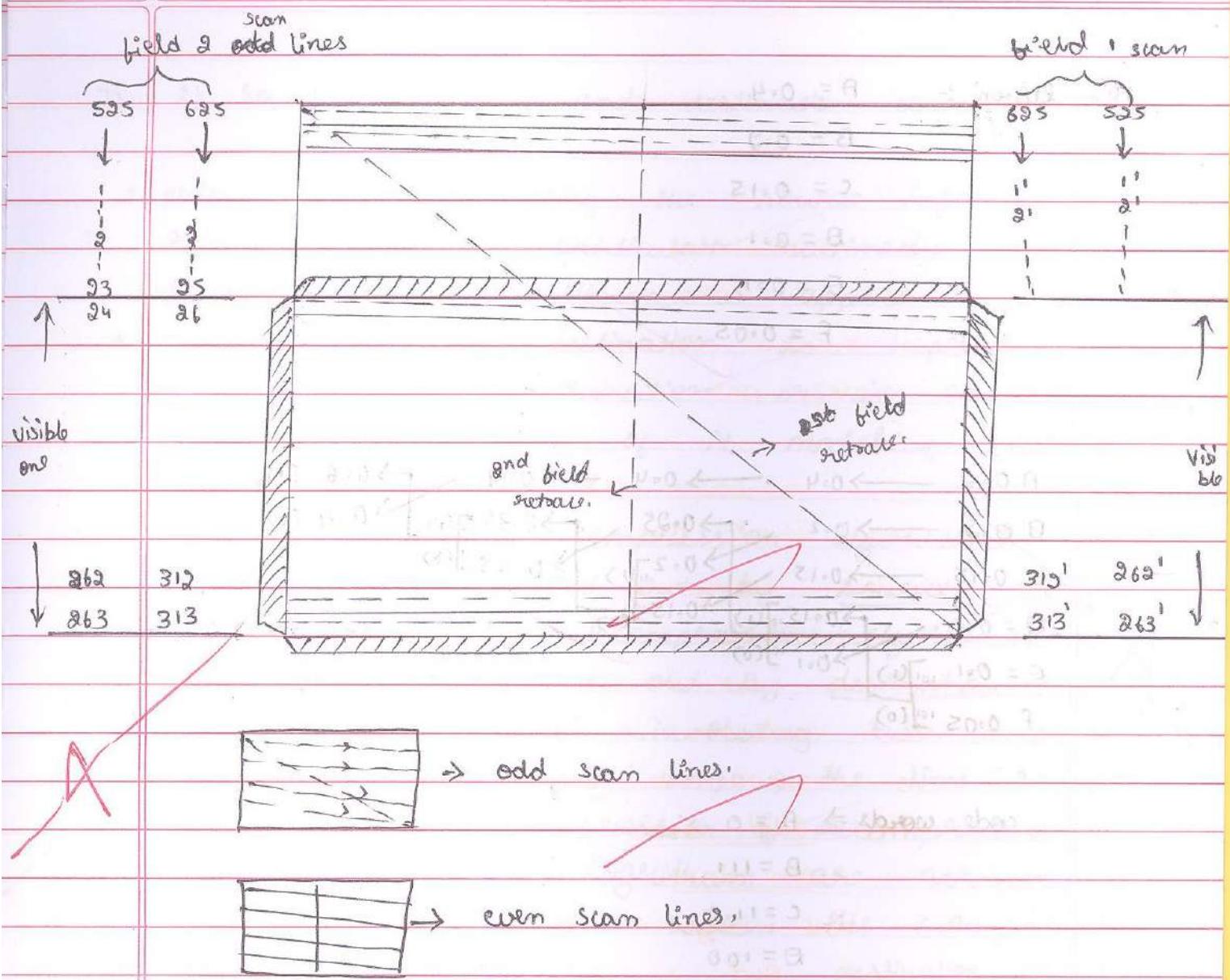
* Each field is alternatively refreshed at 60/50 Hz per second and hence the frame is refresh rate at 30/25 Hz per second.

19
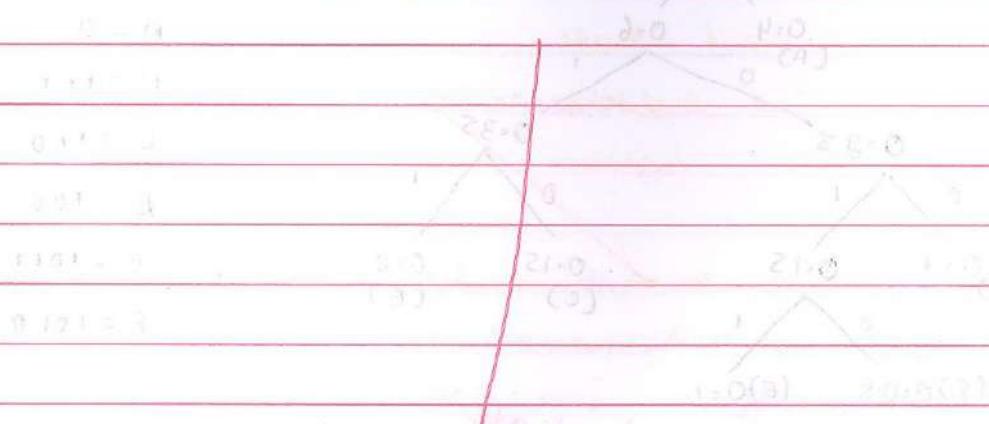
Multiple choice

1. image decompression
2. decoder. ✗ (d)
3. Both A and B.
4. text.
5. Bitmap.
6. lossy compression. ✗ (b)
7. All of the above.
8. GIF. ✗ (c)
9. Joint photographic experts group.
10. LZW.

$\frac{07}{10}$

— END

$\frac{48}{50}$

BH
22/04/2025

1) ADPCM signal encoder and decoder.

ADPCM signal encoder.

lower subband bandlimiting filter 150HZ - 3.5KHZ	lower subband ADPCM encoder ↑ 8KSPS	48 Kbps	
upper subband bandlimiting filter 13.5KHZ - 7KHZ	upper subband ADPCM encoder ↑ 16KSPS	16Kbps	multiplexer

Speech i/p signal →

↓ 64 kbps.

Network

ADPCM signal decoder.

lower subband lowpass filter 150HZ - 3.5KHZ	lower subband ADPCM decoder	48 kbps	
upper subband lowpass filter 13.5KHZ - 7KHZ	upper subband ADPCm decoder.	16Kbs	Demultiplexer

Speech o/p signal ←

=> ADPCM

Adaptive differential pulse code modulation

* we have both signal encoder and decoder in ADPCM.

8. <u>Token Ring MAC operation.</u>

→ Transmission

```
            ┌──────────────────┐
            │  wait for the    │←──────────────┐
            │ token to be received │            │
            └──────────────────┘                │
                    │                           │
       ┌────────────┤                           │
       │    ╱────────────────╲    N   ┌──────────────┐  │
       │   ╱  frame waiting    ╲──────│ forward token │  │
       │   ╲  to be transmitted ╱      │ with correct  │──┤
       │    ╲────────────────╱        │  priority     │  │
       │            │ Y               └──────────────┘  │
       │    ╱────────────────╲    N   ┌──────────────┐  N │
       │   ╱  Token priority &  ╲─────│   R-bits <    │───→│
       │   ╲  frame priority    ╱      │ frame priority │  │
       │    ╲────────────────╱        └──────────────┘  │
       │            │ Y                      │ Y         │
       │    ╱────────────────╲        ┌──────────────┐  │
       │   ╱  Transmit to      ╲       │  set R-bits to │──→│
       │   ╲     token         ╱       │ frame priority │  │
       │    ╲────────────────╱        └──────────────┘  │
       │            │                                    │
       │   ┌──────────────┐    Y    ┌──────────────┐    │
       │   │ token hold,   │────────→│ forward token │────┘
       │   │ enter entity  │         │ with correct  │
       │   └──────────────┘          │  priority     │
       │            │ N              └──────────────┘
       └────────────┘
```
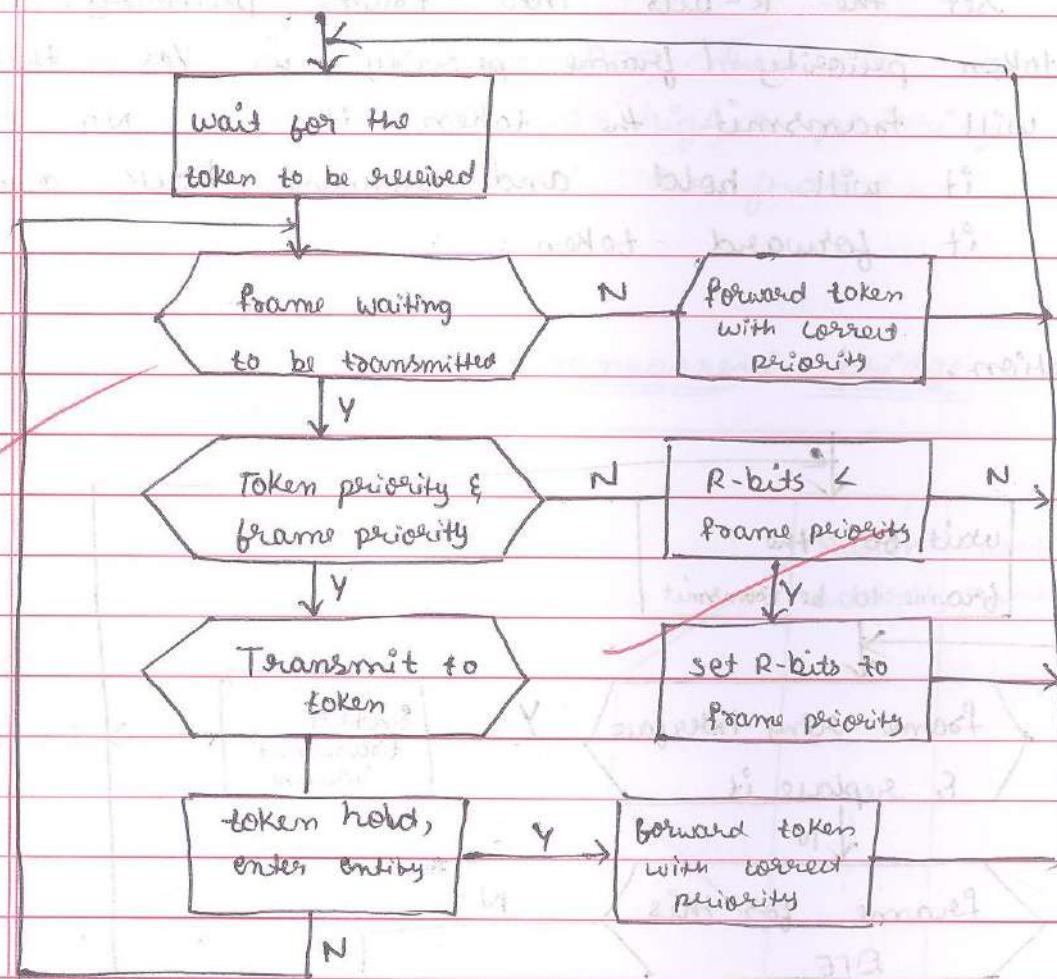
* In token Ring MAC operation the frame handling during transmission the process are :
+ first wait for the token that must be received from the ring.
+ If the token was received then frame will be transmitted if not it will give forward to token to correct the priority.
+ If the token or ring transmitted then to

* In architecture of a transparent bridge the main thing is forward database which is used in transparent bridge.
* The forward database is combined with the standard address and port number
* The FDB is imported with two things
  i) port managment software
  ii) Bridge protocol entity.
* This follows and allows to the memory address which are intermediate to to the MAC chipped and MAC chippset and this are connected to the memory address.
* MAC chipped is connect to the LAN segment A which is part 1 of memory address
* This LAN segment A helps in end the station.
* MAC chipset is connected to the LAN segment B which is part 2 of memory address and helps in end the station.

END

50/50
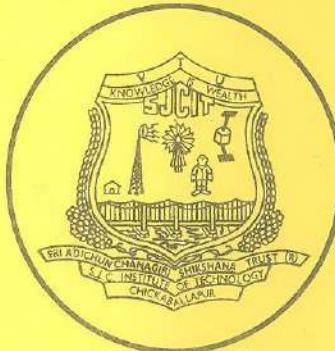
Assignment Book

Name ..... Bhoomika - G

Class ..... 6th sem 'A'   Roll/Reg. No 1SJ22EC024

Subject ..... Multimedia Communication

Assignment No.	Date	REMARKS		Sig. of the Student	Sig. of the Staff Member
I	8/3/25	EXCELLENT ** Assignment - 1	(10)	Bhumika	KH 10/03/25
II	29/3/25	EXCELLENT ** Assignment - 2	(10)	Bhumika	KH 01/04/25
III	12/4/25	EXCELLENT ** Assignment - 3	(10)	Bhumika	KH 21/04/25
IV	7/5/25	EXCELLENT ** Assignment - 4	(10)	Bhumike	KH 07/05/25
V	23/5/25	EXCELLENT ** Assignment - 5	(10)	Bhumke	KH 23/05/25
			10		

KH

Staff-in-Charge   Head of Department

. Apply the concept of communication networks by listening five types used in multimedia services and explaining :-

i) Integrated services Digital network (ISDN)

ii) Broadband multi-service network, with relevant figures.

⇒ Five basic types of communication networks are used to provide multimedia communication services.

    1. Telephone networks

    2. Data networks

    3. Broadcast television networks

    4. Integrated service digital networks

    5. Broadband multiservice networks.

i) Integrated service digital networks (ISDN) :-

* Started to be deployed in early 1980s

* designed to provide PSTN users with the capability of having additional services

* provide two separate communication channels.

* Digital subscribe line (DSL) - access circuit to ISDN.

* Digitization of analog signal produces binary stream.

* Basic rate access :- basic DSL of ISDN.

    → two 64Kbps channels.

    → single 128Kbps channel.

    → to synchronize two separate 64Kbps bitstream into single 128Kps stream requires aggregate function.

d) show in the form of diagram the networks and essential items of equipment that are used to send an email message from a PC at home to i) A PC attached to a site / campus LAN, ii) A PC attached to an enterprise wide priode network / internet.

⇒
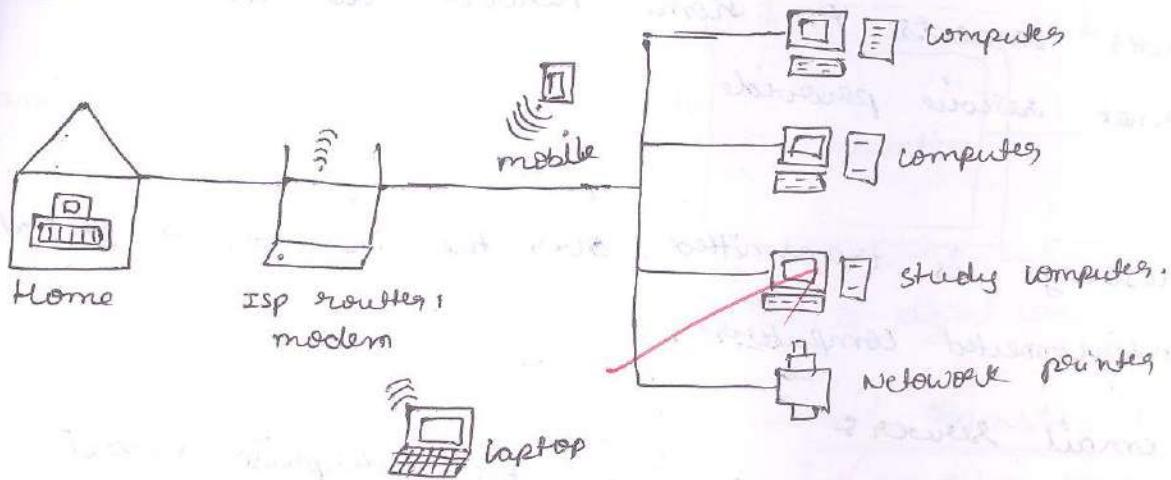
i) Email to a PC attached to a site / campus LAN.

a) Home network :-
The email message originates from a PC user at home connected to a home network.

b) Home Router :-
The home router connects the home network to the internet via an internet service provider (ISP).

c) Internet :-
The email message is transmitted over the internet a global network of interconnected networks.

d) Campus LAN :-
The email message arrives at the campus LAN, a social area network that connects computer within a university

ii) emails to a "pc" attached to an enterprise - wide p[...]
network / internet.

a) Home network:-

The email message originates from the pc user at hom[...]
Connected to a home network.

b) Home Router :-

The home router connects the home network to the Interne[...]
via an internet service provide.

c) Internet :-

The email message is transmitted over the internet, a globa[...]
network of interconnected computers.

d) Enterprise email servers

The email message is received by the enterprise email
server, which stores and forwards email messages.

4+2+2+2 = 10

Scan

10/03/2022

— END —

Assignment -2

1) Design signal encoder and decoder and draw the associated waveforms.

=) Signal encoder design :-
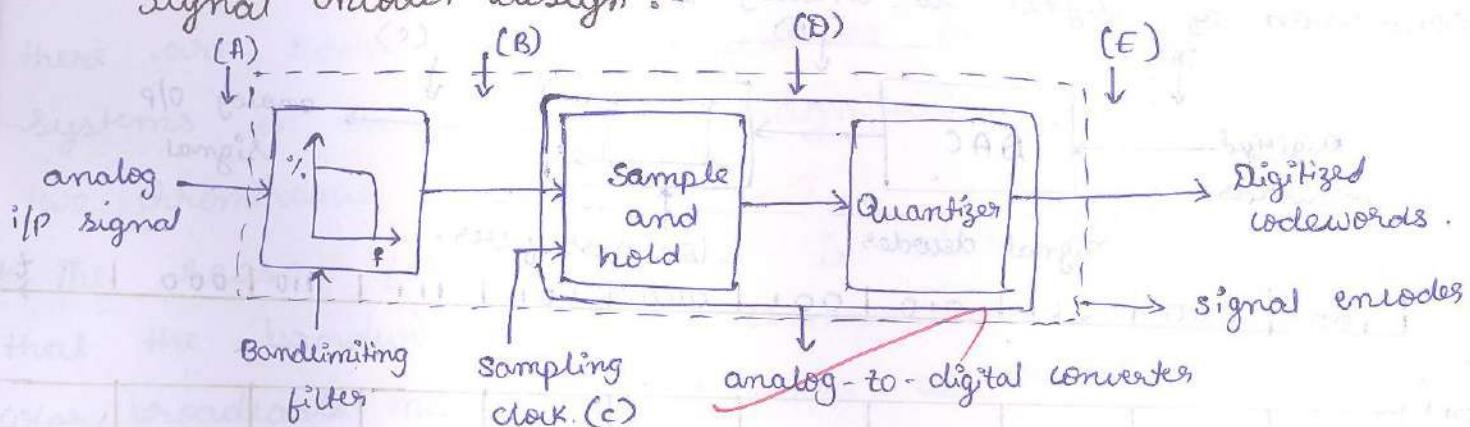
* signal encoder is a electronic circuit converts, time varying analog signals to digital form.

→ waveform.
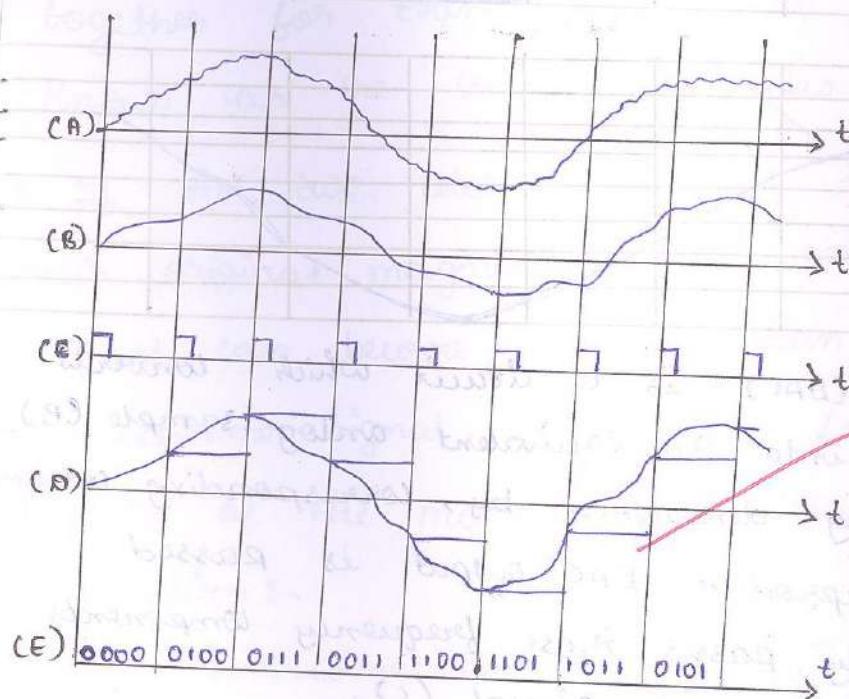
Bandlimiting filter :- remove selected higher - frequency components from the source signal (A).

→ encoder consists 2 main circuits
 i) Bandlimiting filter.
 ii) ADC which has 2 components
  a) sample - and hold circuit
  b) Quantizer.

* sample and hold :-
got output of bandlimiting filter, (B) signal used to sample amplitude of the filtered signal at regular time intervals (c) and to hold the sample amplitude constant b/w samples (D) signal quantizer circuit got signal (D) which converts each sample amplitude into a binary value known as a codeword like (E) signal.

aid of a digram:-

i) 4:2:2   ii) SIF   iii) CIF.

=> i) 4:2:2 format.

* This is the orginal digitization format used in television

* Non interlaced scanning is used.

* The three component (analog) video signals from a source in the studio can have bandwidths of up to 6MHz for the luminance signal and less than half this for the two chrominance signals.

* The number of bits per sample was chosen to be 8 for all three signals which correspond to 256 quantization intervals.

Vertical line ... Horizontal line.

$0 = Y_1$, $+ = C_b$, $X = C_r$, sample positions.
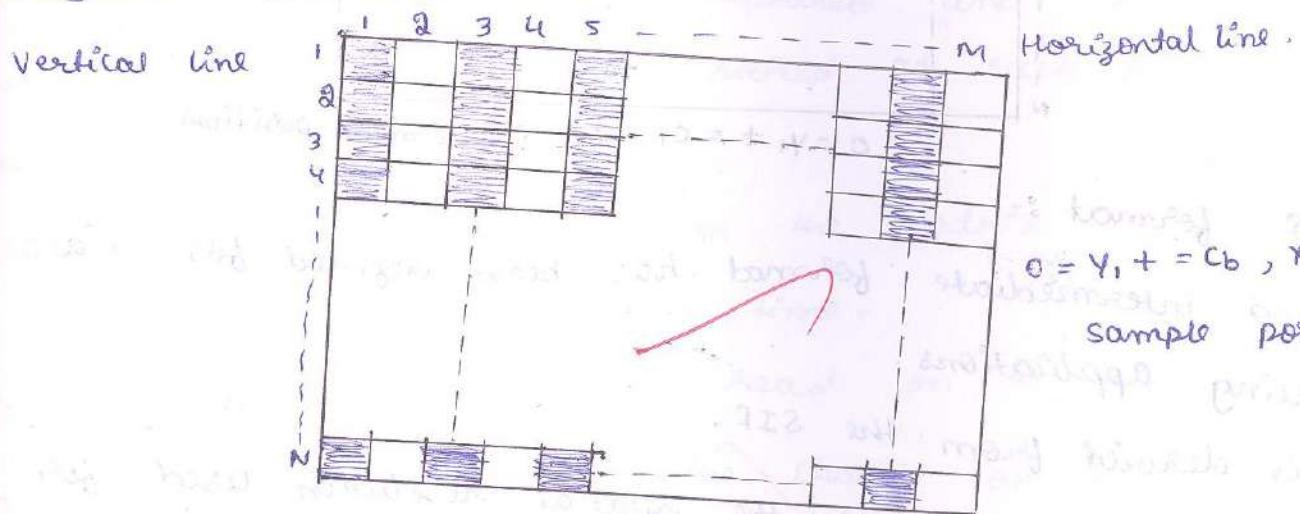
ii) SIF format :-

* Has been found to give a picture quality comparable with that obtained with video cassette recorders.

* use half the refresh rate as that used in the 4:2:0 format known as temporal resolution.

* The worst-case bit rate in both systems with this format.

* If output of this directed to computer bit ma[y]
be loaded straight into the frame buffer ready
displayed.

* Number of file formats are used to store sets of
one of the most popular is a version of TIFF.

image capture
or
frame gabber

CPU
+
memory

scanner
interface.

frame
buffer.

color picture

scanner.

pixel depth
pixel 1
pixel 2
pixel n
pixel 1
pixel 2
pixel n
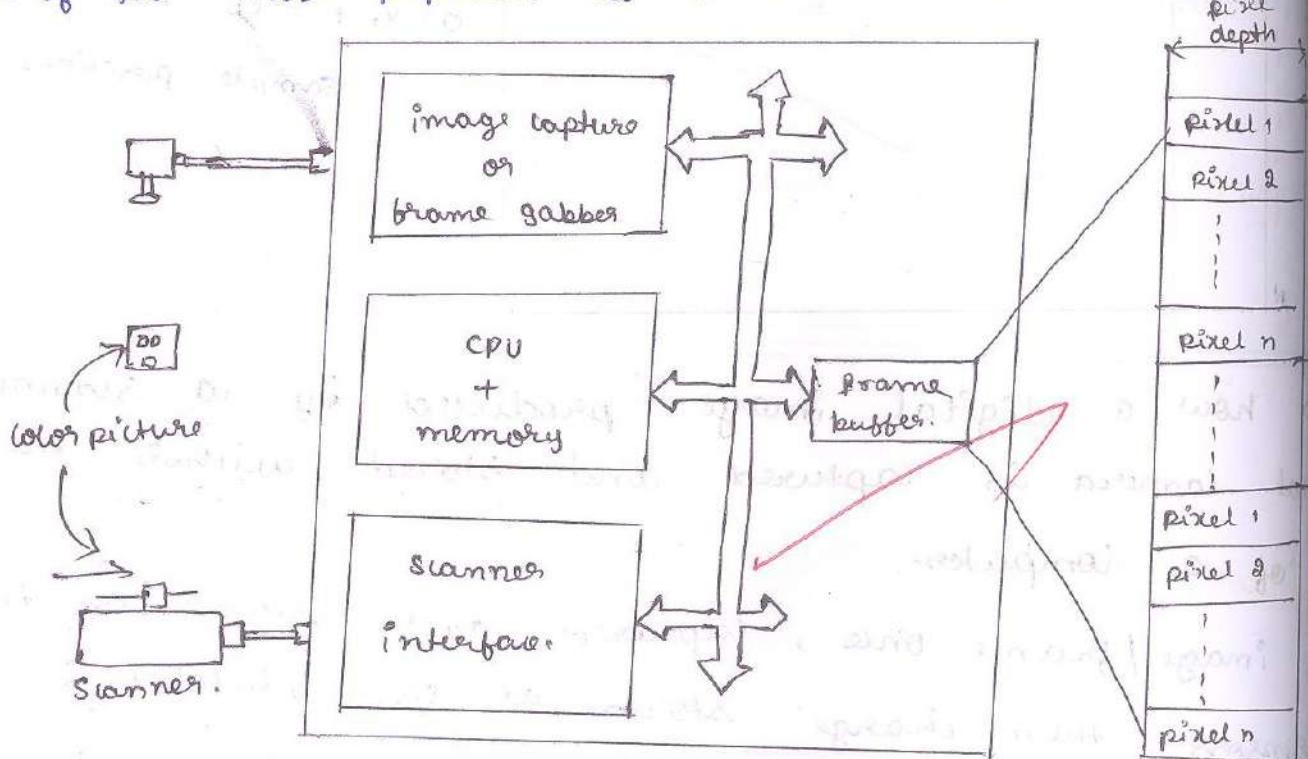
the figure above shows typical arrangement used to ca[p]
flid and store a digital image produced by a scanner o[r]
* pe digital camera (a still image camera or a video came[ra]
H A+2+2+2 = 10
Jean
KH
01/04/2005
is
ii)

END

Assignment - 03

1) Identify the five main stages associated with the baseline mode of operation of JPEG with the aid of a diagram and give a brief description of the role of each stage.

⇒ The five main stages are:-

    i) Image/block preparation

    ii) Forward DCT

    iii) Quantization

    iv) Entropy Encoding

    v) frame building

i) Image/block preparation:-

* The source image is made of one or more 2-D matrices of values.

* for continuous tone monochrome image, a single 2-D matrix is required to store the set of 8-bit grey level values that represent the images.

* But before performing the DCT on each matrix, another step known as block preparation is carried out.

ii) Forward DCT:-

* Transforms the pixel information from spatial domain to frequency domain with the DCT.

* Each pixel value is quantized using 8 bits which produces a value in the range 0 to 255 for the intensity - R, G, B or Y

* The value in the range - 128 to +127 for the two chrominance values - Cb and Cr.

Step 3 :- The output code are :-

124523461

Instead of sending 14 characters, only 9 codes need to be send. Compression ratio $= \frac{14}{9} = \boxed{1.56}$

---

3) Make use of static Huffman coding to encode the text : AAABBCD.

⇒ Lets calculate the frequency of the text.
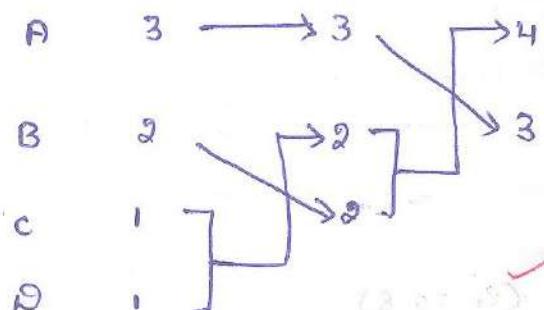
	Code	Code length
A	0	1
B	1 0	2
C	1 1 0	3
D	1 1 1	3

code   Tree

The encoded bit string to AAABBCD is

A → 0
A → 0
A → 0
B → 10
B → 10
C → 110
D → 111
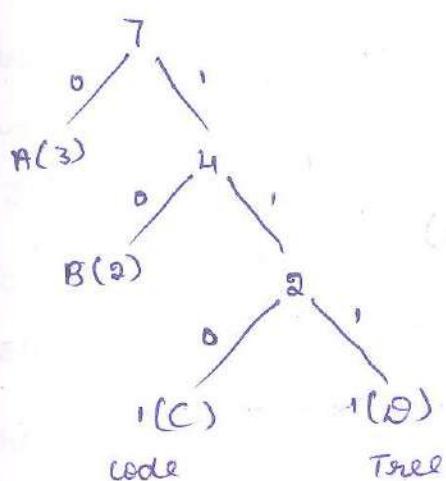
∴ AAABBCD = 000101011011 1

segments :-

* each scan multiple segments each with block.
* this frame structure allows each segments to be decoded independently reducing error propogation.

start of frame	frame header	frame contents	end of frame

scan header	scan	- - -	scan

Block	Block	- - -	Block

segment header	Segment	- - - - -	segment Header	Segment

DC	skip value	- - - - -	skip value	end of block.
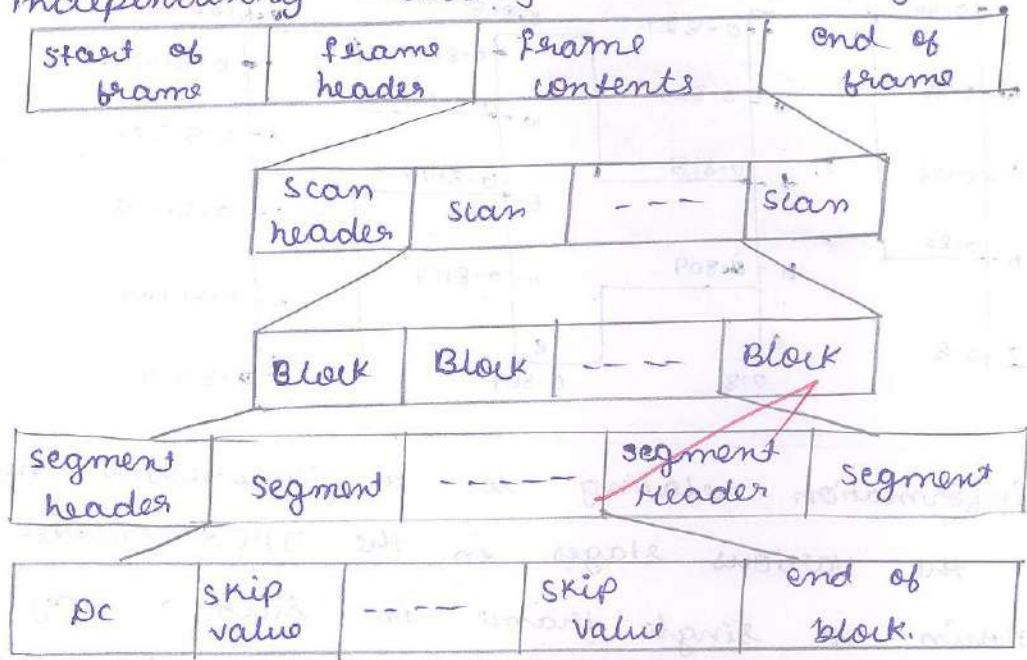
→ **JPEG decoding :-**

* JPEG decoder consists of stages that reverse the operat of the encoder.
* **Huffman Decoder :-** Decompress the encoded bit stream using huffman table and separate DC and AC co-efficients.
* **Differential and Run length decoding :-**
* DC values decoded using def decoding
* AC values decoded using run-length decoding.

* **Inverse DCT :-** converts 8x8 blocks from frequency domain block to spatial domain.

$$p[x.y] = \Sigma \Sigma c(i) y(j) : F(i, j) \cos.$$

4+2+2+2 = 10

fun

BM
21/04/2024

— END —

1. Select and delineate the operation of a DPCM signal dencodes and decoder providing brief explanation with the aid of a schematic diagram. Include in your explanation the source of errors that can arise.

* Differential pulse code modulations (DPCM) is a derivative of standard PCM.

* Exploits the fact that for most audio signals, the range of the differences in amplitude blw successive sample of the audio waveform is less than the range of the actual sample amplitudes.

* Hence, if only the digitized difference signal is used to encode the waveform then fewer bits are required than for a comparable PCM signal with the same sampling rate.

* A DPCM encoder and decoder are shown in figure(a) and a simplified timing diagram of the encoder is shown in figure (b)

* The decoder operates by simply adding the received difference signal (DPCM) to the previously computed signal held in the register (PCM).

* Typical savings with DPCM, are limited to just 1 bit, which for a standard PCM voice signal, example, reduces the bit rate requirement from 64Kbps to 56 Kbps.

Analyze the principles on which LPC codes are based, hence with the aid of a schematic diagram of an LPC encoder and decoder.

The basic features of an LPC encoder / decoder are shown in figure below.
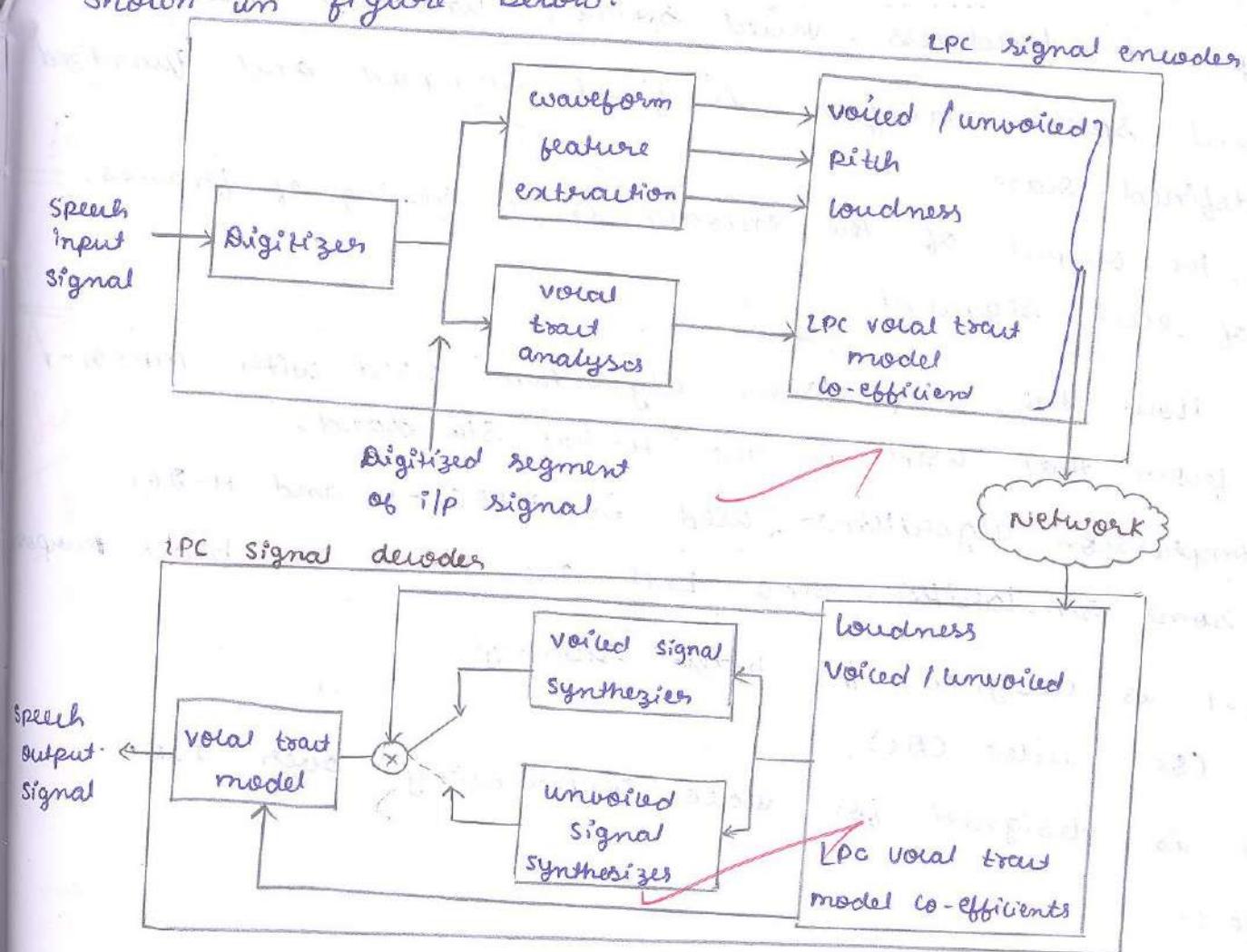
Linear predictive coding :-

All the previous algorithms we have considered are based on sampling the time varying speech waveform and then either sending the quantized samples directly (PCM) or sending the quantized difference signal (DPCM) and its derivative.

It involve the source simply analyzing the audio waveform to determine a selection of the perceptual features it contains.

Compression efficiency :-

MPEG-1 is more efficient due to B-frames and better prediction.

* H.261 is simpler, optimized for real-time use.

* MPEG-1 offers better quality and compression while H.261 focuses on low-latency transmission.

$4+2+2+2 = \boxed{10}$

Seen

KH

07/05/2025

— END —

1) Identify the network design issues that directly the video compression.

⇒ Network design issues can directly affect video com and its performance, particularly in streaming or time applications. These include:

a) Bandwidth availability:-

* Impact :- low or fluctuating bandwidth limits the bit rate available for video, forcing higher compression w can reduce video quality.

* Design concern :- ensure sufficient bandwidth allocati per stream or implement adaptive bit rate streaming

b) Latency :-

* Impact :- High latency can delay video playback, affecting real-time applications like video conferencing

* Design concern :- use low-latency protocols and routing strategies to minimize delays.

c) packet loss :-

* Impact :- lost packets can result in video artifacts or freezing especially in highly compressed streams where data is inter-dependent.

* Design concern - Include error correction techniques like re-transmission strategies.

4) Construct the flow diagrams to explain the tra and reception procedures of a frame with a token LAN, include token hold timer.

In a token ring LAN, a special frame called a t circulates around the network. When a node has data transmit, it captures the token, inserts its data int the token, and sends it along the ring.

* The token hold timer regulates how long a node can the token, ensuring their access and preventing any node from monopolizing the network.

Token

Station-1

monitor

station-2

station-4

station-3
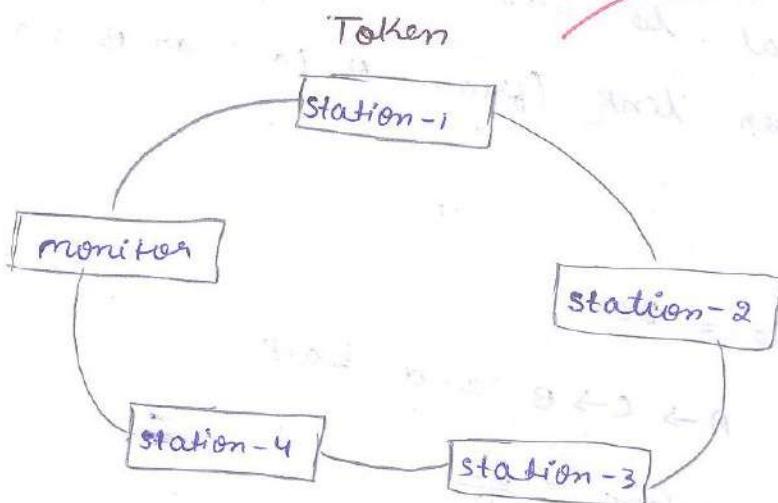
* Frame transmission and Reception flow :-

Token aquistion :- A node with data to send must fast Capture the token frame as it circulates around the ring.

From reception :-

Each node along the ring passively receives the frame checks its address and if its the destination, it copies the data and sets the frame back to the "token" state, releasing it back into the network.
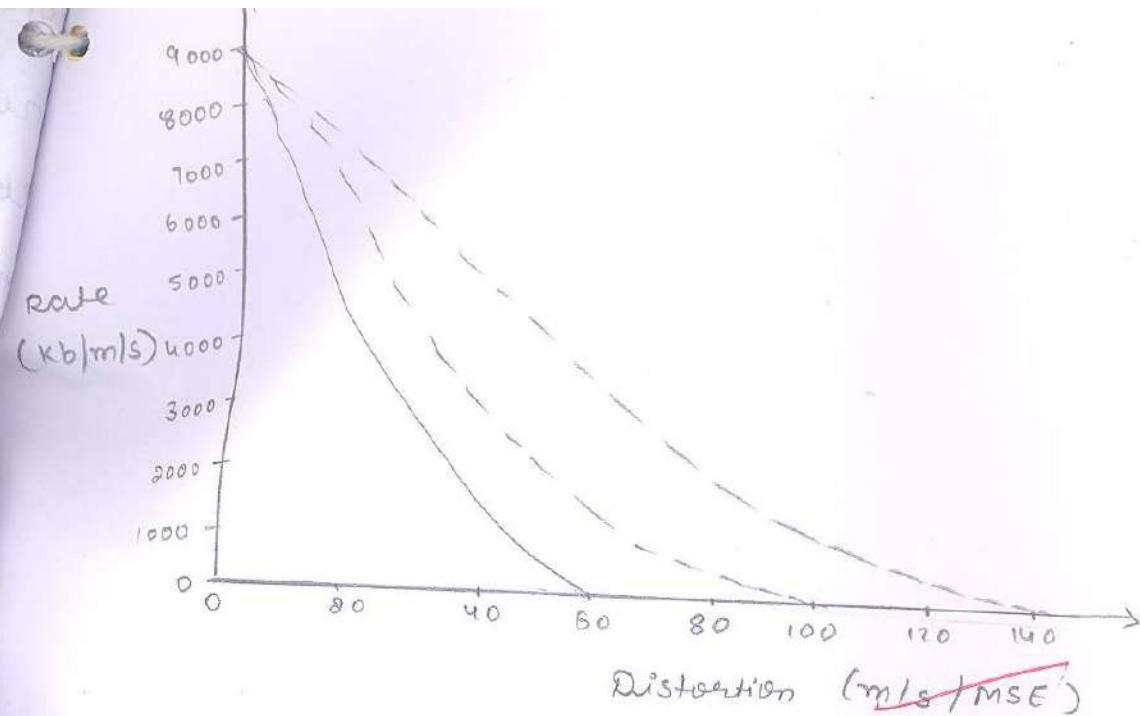
Distortion (D) - This is the difference between the original signal (s) and the reconstructed signal (s). Common distortion metrics include mean squared error (MSE), peak signal-to-noise Ration (PSNR), and structural similarity Index (SSIM).

Rate-distortion (R(D)) model - The R(D) model seeks to find the optimal balance b/w compression and quality. By adjusting the QP, the encoder can trade off between achieving a higher compression ratio (lower-rate) and minimizing the distortion.

Intricacies of distortion measurment:-

The QP value directly influence the level of distortion. smaller QP results in a lower distortion, while a larger QP (fewer bits) results in a higher distortion.

— END —

4+2+2+2=10

23/05/2025

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi-590018, Karnataka, India

Mini-Project Report

On

"LZW ALGORITHM USING AUDIO COMPRESSION"

Submitted in partial fulfilment of the requirements for the award of

BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

SUBMITTED

By

BHOOMIKA G   **1SJ22EC024**

Under the Guidance of

Dr. S.BHARGAVI

Professor

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

SJC INSTITUTE OF TECHNOLOGY

CHICKABALLAPUR-562101

2025

SJC INSTITUTE OF TECHNOLOGY, Chickballapur-562101

Department of Electronics And Communication Engineering

CERTIFICATE

This is to certify that the Mini-Project work entitled **"LZW ALGORITHM USING AUDIO COMPRESSION"** is a bonafied work carried out by **BHOOMIKA G (1SJ22EC024),** submitted as part of the **project-based learning assignment** in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Electronics and Communication in Visvesvaraya Technological University, Belagavi during the academic year 2025. It is further certified that all corrections and suggestions recommended during the internal assessment have been duly incorporated into the report. The mini-project report has been reviewed and approved, as it meets the academic standards and guidelines prescribed for such assignments in the Bachelor of Engineering curriculum.

Signature of the Course Faculty

Dr. S.Bhargavi

Professor

Department of ECE

SJC Institute of Technology

Chickballapur-562101

LIST OF CONTENTS

1.INTRODUCTION :

Compression in digital technology refers to the process of reducing the size of data. It is used to make files smaller for easier storage, faster transmission, and more efficient processing. Compression works by eliminating redundancy or using mathematical algorithms to represent data in a more compact form. There are two main types of data compression: lossless and lossy.

Audio signal compression using lossless compression algorithms, audio signal is first transformed into text by employing uniform quantization with different step sizes. This text is then compressed using lossless compression algorithms which include Run length encoding (RLE), Huffman coding, Arithmetic coding and Lempel-Ziv-Welch (LZW) coding.

The performance of various lossless compression algorithms is analyzed based on mainly four parameters, viz., compression ratio, signal-to-noise ratio (SNR), compression time and decompression time.

The analysis of the aforementioned parameters has been carried out after uniformly quantizing the audio files using different step sizes. The study exhibits that the LZW coding can be a potential alternative to the MP3 lossy audio compression algorithm to compress audio signals effectively

Audio compression specifically deals with reducing the size of audio files. Like general compression, it can be either lossless or lossy. The goal is to make audio files more manageable for storage or streaming without significantly affecting perceived sound quality.

5.PYTHON TOOLS AND LIBRARIES FOR AUDIO COMPRESSION :

1.wave / scipy.io.wavfile

Use: Reading and writing .wav audio files for uncompressed audio data handling.

```python
import wave
import numpy as np
from scipy.io import wavfile

# Read WAV file
rate, data = wavfile.read("audio.wav")
```

2.Custom LZW Implementation

Use: Applying LZW compression and decompression on raw audio data arrays.

```python
def lzw_compress(data):
    dictionary = {bytes([i]): i for i in rang
    w = b""
    compressed = []
    for c in data:
        wc = w + bytes([c])
        if wc in dictionary:
            w = wc
        else:
            compressed.append(dictionary[w])
            dictionary[wc] = len(dictionary)
            w = bytes([c])
    if w:
        compressed.append(dictionary[w])
    return compressed

# Convert audio to byte stream
byte_data = data.tobytes()
compressed = lzw_compress(byte_data)
```

3. matplotlib / numpy

Use: Visualizing audio waveforms and comparing original vs. compressed sizes.

```python
import matplotlib.pyplot as plt

# Plot original audio waveform
plt.plot(data)
plt.title("Original Audio Waveform")
plt.xlabel("Sample")
plt.ylabel("Amplitude")
plt.show()
```

7.APPLICATIONS :

Applications of Audio Compression

- **Music Streaming:** Audio compression is widely used in music streaming services, such as Spotify and Apple Music.
- **Podcasting:** Compressed audio files are used in podcasting to reduce file size and improve streaming quality.
- **Audio Books:** Compressed audio files are used in audio books to reduce file size and improve accessibility.
- **Voice Assistants:** Compressed audio files are used in voice assistants, such as Siri and Alexa, to improve speech recognition and response times..

8.CONCLUSION :

Audio compression is a crucial technique for efficiently managing digital audio data, offering a balance between file size reduction and audio quality. It enables more efficient storage and transmission of audio, making it essential for modern digital audio applications.

Various techniques, both lossy and lossless, cater to different requirements and allow for a trade-off between file size and quality.When the file is to be used by a user, the decompression time required by LZW coding is almost same as that required by RLE coding. Considering the above facts, it can be concluded that LZW coding is the best lossless compression algorithm for compressing audio files of large sizes.

9.REFERENCES :

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[6]Python Audio Libraries

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[8] Wikipedia:python- https://en.wikipedia.org/wiki/python

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$$\frac{50}{50}$$

26/05/2025

(2)

|| JAI SRI GURUDEV ||

SRI ADICHUNCHANAGIRI SHIKSHANA TRUST (R)

S J C INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR - 562 101

(CIE)

CONTINUOUS INTERNAL EVALUATION BOOKLET

UNIVERSITY SEAT NUMBER

1	S	J	2	1	E	C	0	5	6

Student Name : Hemanth Kumar. A   Branch ECE

Semester & Section VI - A   Subject multi media communication   Subject Code BEC 613A

CIE - I

Date : 2 5 0 3 2 5

Student Sign A.Hemanth.

Invigilator Sign M.ji.N2s/1

Marks Awarded for CIE - I

	a	b	c	d	Total
1	—	—	—	—	—
2	02	—	—	—	02
3	09	—	—	—	09
4	—	—	—	—	—
5	—	—	—	—	—
6	07	—	—	—	07
7	04	—	—	—	04
8	—	—	—	—	—
9	—	04	—	—	04
10	—	—	—	—	—

MCQS- 05/10 A.Hemanth

Marks Obtained in CIE - I	26/50 - 13/25
Assignment Marks	10/10
Subject Staff Sign	BH 24/03/25

ASSIGNMENT - 10/10

CIE - II

Date : 2 2 0 4 2 5

Student Sign A.Hemanth.

Invigilator Sign

Marks Awarded for CIE - II

	a	b	c	d	Total
1	10	—	—	—	10
2	—	—	—	—	—
3	—	—	—	—	—
4	—	—	—	—	—
5	—	—	—	—	—
6	10	—	—	—	10
7	07	—	—	—	07
8	—	—	—	—	—
9	—	—	—	—	—
10	05	—	—	—	05

MCQS- 04/10 A.Hemanth

Marks Obtained in CIE - II	32/50 - 16/25
Assignment Marks	09/10
Subject Staff Sign	BH 05/04/25

MINI-PROJECT - 09/10

CIE - III

Date : 2 7 0 5 2 5

Student Sign A.Hemanth

Invigilator Sign Ma

Marks Awarded for CIE - III

	a	b	c	d	Total
1	10	—	—	—	10
2	—	—	—	—	—
3	—	—	—	—	—
4	—	—	—	—	—
5	—	—	—	—	—
6	—	—	—	—	—
7	—	—	—	—	—
8	03	—	—	—	03
9	—	—	—	—	—
10	—	—	—	—	—

A.Hemanth

Marks Obtained in CIE - III	13	50 - 7/25
Assignment Marks	05/05	
Subject Staff Sign	BH 29/05/25	

MCQS- 05/05   A-Kumar

Average CIE Marks	15/25
Average Assignment Marks	24/25
FINAL CIE Marks	39/50

INSTRUCTIONS TO THE STUDENTS

1. USE BLACK BALL POINT PEN ONLY.

Signature of Staff with Date BH 02/06/2025

Signature of HOD with Date

9 b] i] at 64 kBps

$VGA = 2.457\ 600 \times 10^6 \div 64 \times 10^3$

$VGA = 38.4\ sec.$

at 64 KBPS

$SVGA = 18.874\ 368 \times 10^6 \div 64 \times 10^3$

$SVGA = 294.912\ sec.$

ii] at 1.5 Mbps

$VGA = 2.457\ 600 \times 10^6 \div 1.5 \times 10^6$

$VGA = 1.638\ sec$

$SVGA = 18.874\ 368 \times 10^6 \div 1.5 \times 10^6$

$SVGA = 12.5829\ sec$

ii] Duplex mode:-


we can able to send the data from
the both side but at single time
we cand do only one operation.
either recive (or) transmite.

iii] Half full Duplex mode:-
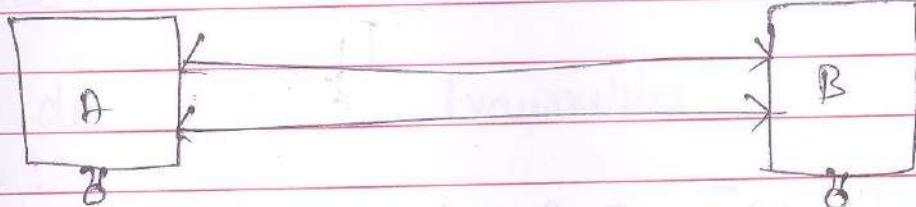
Half full Duplex is also simular to the Duplex
mode. Be we can able to send and
recive the data at a time. we can able
to do the both operations at a time.

iv] Broad band mode: multi cast Media mode:-
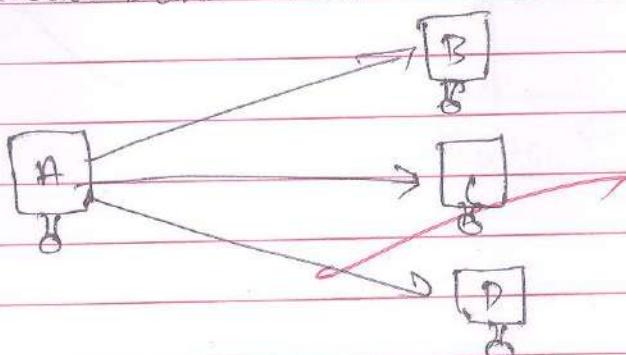
2] PSTN with high speed modem:

Main component of PSTN)

PSTN Network.

transmitter → server. → PSTN → modem
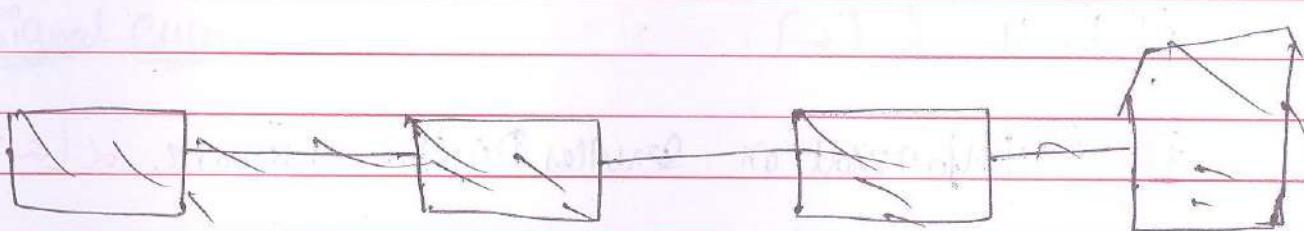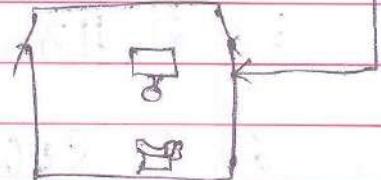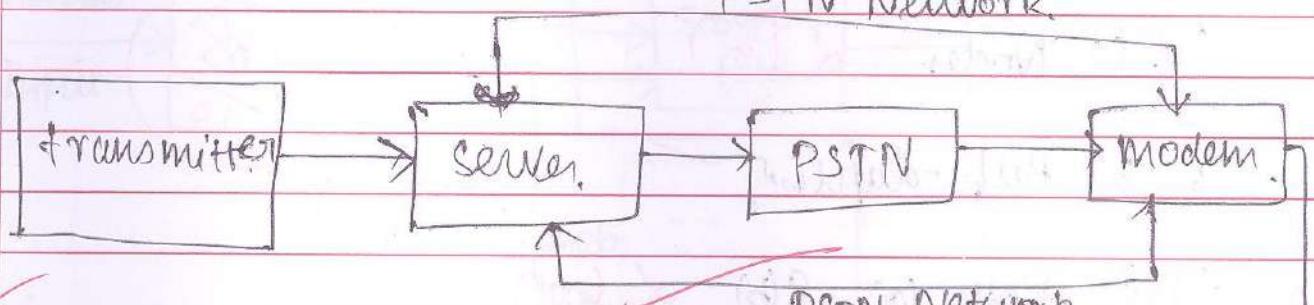
PSTN Network.

Telephony

* when the transmitter sends the data. It will recives the server. the server to the modem will have the seprate PSTN Network. with the help of This Network we can able to recive the high speed data to the Basic telephony. If we do not want the high speed network. we can able to transmite to the PSTN.

* The modem will recive the data from the PSTN Network.

11

MCQ

1. a) Multimedia. ✓

2) b) 4   ✗ (c)

3). d) Information Services Digital network. ✗ (a)

4) c) Hyper link. ✓

5). c) Nodes   ✗ (a)

6) b) Half-duplex. ✓

7). c) Both (a) & (b)   ✗ (a)

8) a) H3   ✗ (d)

9) a) SRGP. ✓

10) b) Pixel depth. ✓

END

05/10

26/50

bhl
26/03/20

I] Signal encoder & decoder and otr. waveform.

Signal encoder:-
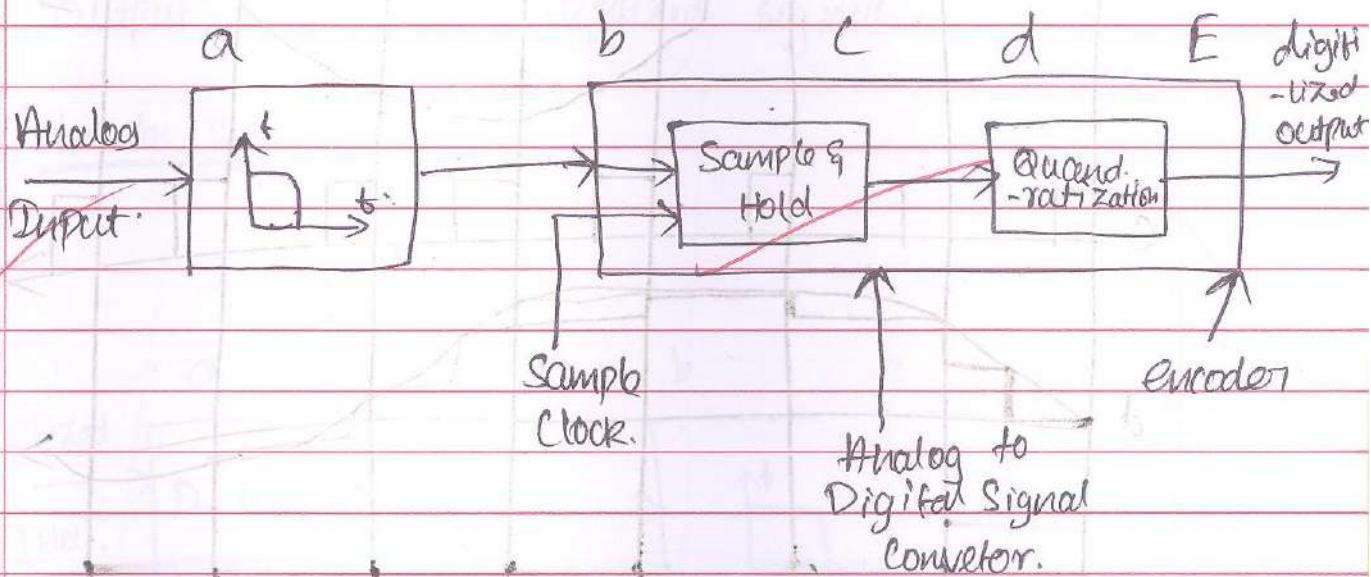
* In the signal encoder. It Contains.

i] Analog input.
ii] Sample clock.
iii] Analog to digital signal convetor.
   * Sample & Hold
   * Quandratization

6] Apply LZW algorithm to compress the string.

A B A B B A B C A BABBA.

String	code.	output	Code	String.
			1	A
			2	B
			3	C
A	B	1	4	A B
B	A	2	5	B A
A	B			
A B	B	4	6	A B B
B	A			—
B A	B	5	7	BAB. BAB
B A B	C	2	8	B C
C	A	3	9	C A
A	B	—	—	—
A B	A	4	10	A B A
A	B	—	—	—
A B	B	—	—	—
A B B	A	6	11	A B B A.
A	EOC	1	—	—

The o/p	code is	1, 2, 4, 5, 2, 3, 4, 6, 1

Compression ratio

$$= \frac{14}{9} = 1.55 \, bit//$$

MCQ.

1] C] Image contras. ∝ (B)

2] C] frames   ∝ (D)

3] D] Both A & B ✓

4] C] Text. ✓

5] B] Bitmap ✓

6] D] None of the above. ∝ (B)

7] A] Run - length ∝ (D)

8] D] GIF.   ∝ (C)

9] C] Joint Photographic expanded Group. ∝ (A)

10] B] LZW ✓

─ END ─

(circled) 04/10

(circled) 32/50

BH
26/04/2025

① The working of a signal encoder & decoder with the help of diagram.

Circuit diagram:

encoder.

Speech signal Input → [lower Sub band limiting filter] —45 kbps→ [lower Sub band encoder] → Mult -er.

[Upper Sub band limiting filter] —16k bps→ [Upper Subband encoder]

Network

decoder:

Speech signal output ← [lower Sub band lowpass filter] ←45kbps→ [lower Sub band decoder] ← Demulti

[Upper Sub band lowpass filter] ←16k BPS← [Upper Subband decoder]

22
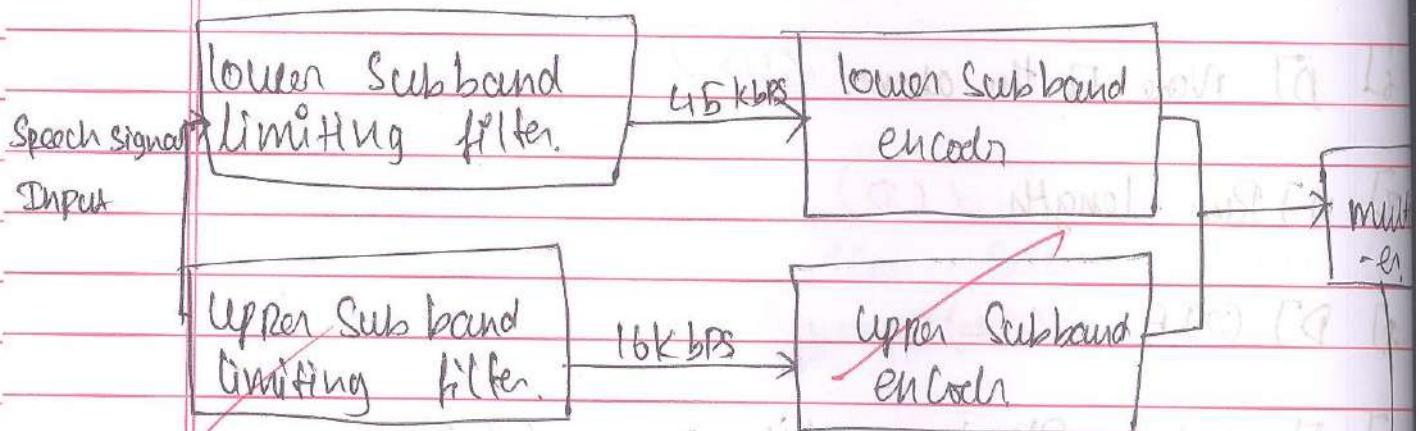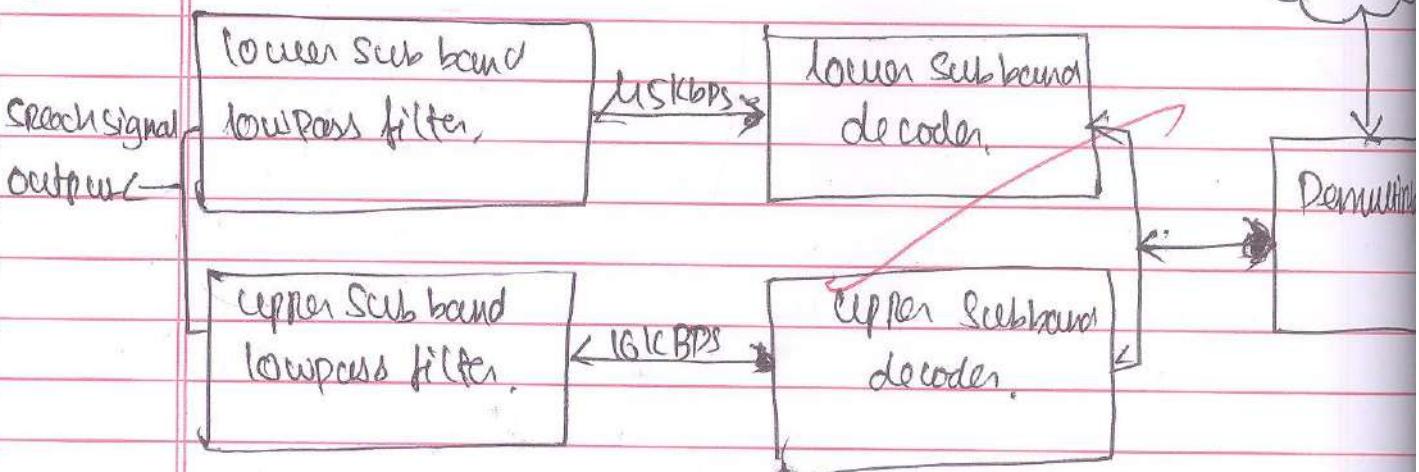
In the decoder

* lower subband lowpassfilter.
* upper subband low pass filter.
* lower subband decoder.
* upper subband decoder.
* Demultiplexer.

* ### Subband low pass filter:

  * In the low pass filter the higher frequen
    signal which has been added in the
    side of transmitter will be removed.

* ### decoder:

  * which is used to decode the ® re
    signal.

Demultiplexer.

which is used to remove the. mixed
on the transmitting way

Network:

which is used to transmite the
signal.

24

⑧ Token ring:-

token ring is used to the concept which is used in networks. which is provided by the network provider. which act as a gate way between the Server & the user.

Digram:-

Server (or)
Cloud storag

Networkprovider

User.

frame transmism ?
frame reception !
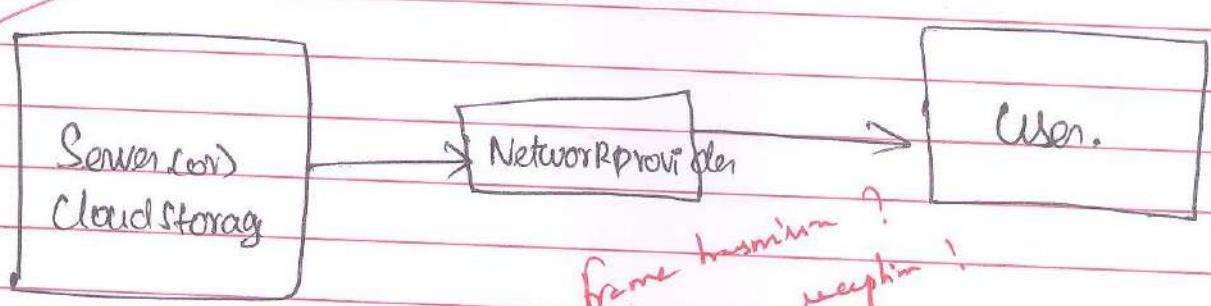
* The group of computers which is using the token ring method and sharing the data through them (or) outer.
* the network provider which have to give the token
* with out the provided token the user are cannot able to share the network (or) data.
* The network provider should give the token to the user.

END.

13/50
29/05/2025

25
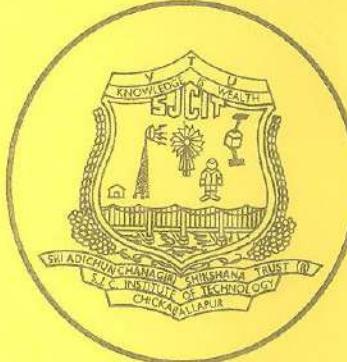
SJC INSTITUTE OF TECHNOLOGY

An Autonomous Institution under VTU from 2024-25

AICTE Approved, Accredited by NAAC with A+ Grade & NBA (CSE, ISE, ECE, ME, CV & AE), Gold Rated by QS I-Gauge

P.B. No.20, B.B Road, Chikkaballapur - 562 101, Karnataka

Assignment Book

Name ..... Hemanth Kumar. A

Class ..... VI – A ..... Roll/Reg. No 1SJ21EC056

Subject ..... MMC

Assignment No.	Date	REMARKS		Sig. of the Student	Sig. of the Staff Member
I	8/3/25	INCOMPLETE Assignment - I	09	A. Hemanth	BH 12/03/25
II	29/3/25	V. GOOD Assignment - II	09	A. Hemanth	BH 02/04/25
III	12/4/25	V. GOOD Assignment - III	10	A. Hemanth	BH 21/04/20
IV	7/5/25	EXCELLENT Assignment - VI	10	A. Hemanth	BH 07/05/20
V	23/5/25	V. GOOD Assignment - V	10	A. Hemanth	BH 24/05/20
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Staff in-Charge

Head of Department

Assignment-I

1] Apply the concept of multimedia communication network by listing five types used in multimedia services & explaining.

i] integrated Service Digital Network (ISDN)

ii] Broadband multimedia network, with relevant figures

. 5 Types of communication network used in multimedia Services.

1] Integrated Services Digital Network (ISDN)

2] Broadband multimedia Service Network.

3] Asynchronous Transfer Mode (ATM) network.

4] Internet protocol (IP) network.

5] Wireless personal Area network (WPAN)

i] Integrated Service digital network (ISPN)

*.- Started Service Digital network.

* Design of ISTN: Two channels were intended from two different Call require 2 separate circuit. to be set up through the seprate.

Dx64kbps Switched channel

Digital Subscriber

Single 128 kbps Switched Channel

Single 1.5/2.0 mbps channel.

Integrated Service digital Network (ISDN)

Two o. independ 64kbps Chann

Single 64kbps switched Channel.

Px64 kbps Switched channel.

Conventional Analog Phone.
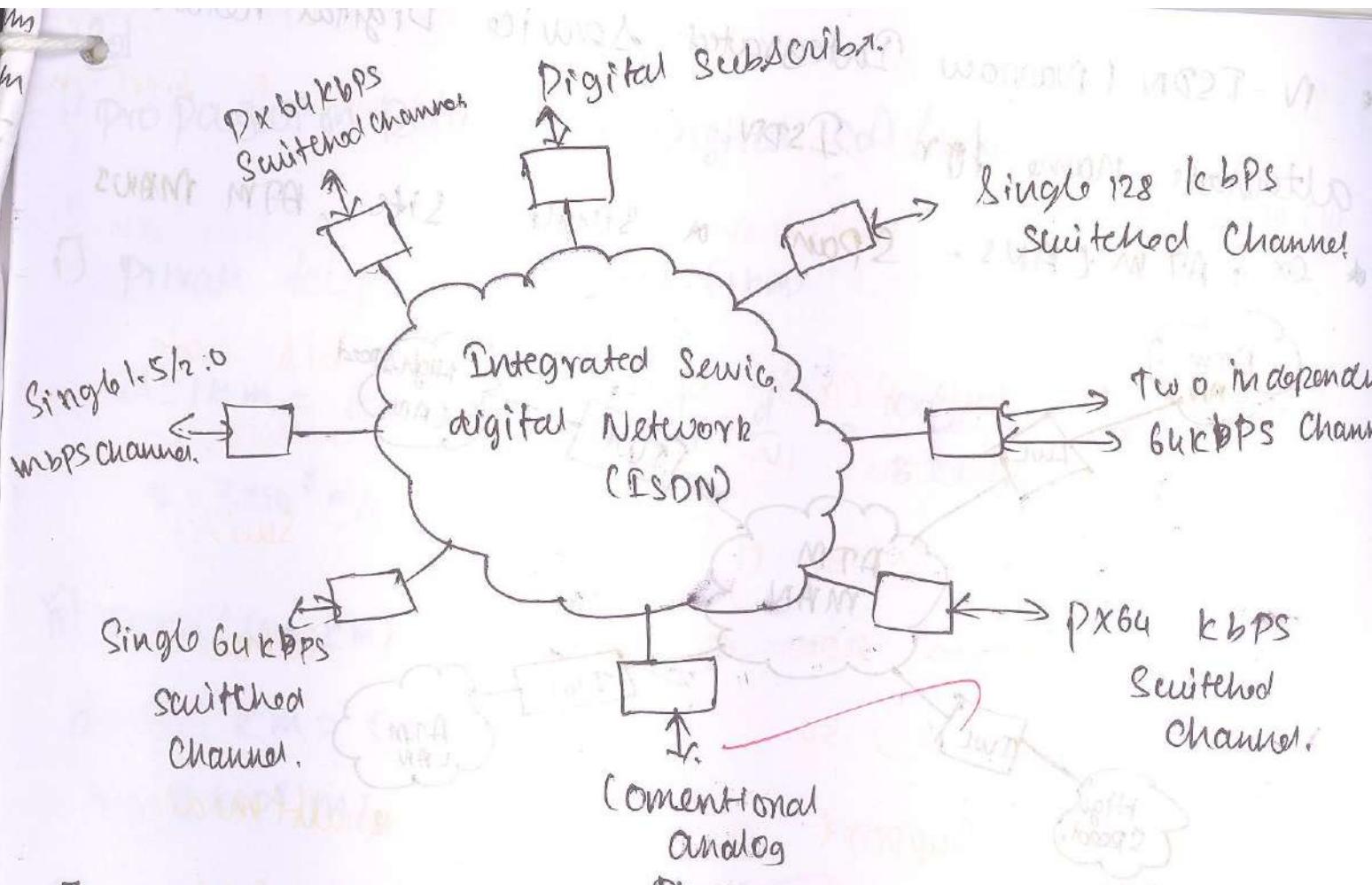
ii] Broadband multiservio network.

* Designed in mid 1980s for use as Public Switched Networks to support a wide range of multimedia communication application.

* <u>Broadband</u> - term used to indicate the circuit associated with a call could have bit rate. In excess of the maximum. bit rate of 2mbps 30 × 64kbps provided by an ISDN.

Propagation Delay (T_p) = Digital (d) / velocity of propogation (v)

i) Private telephone network. (1km)

$$d = 1km = 1000m$$

$$v = 3 \times 10^8 \, m/s$$

$$T_p = \frac{d}{v} = \frac{1000 \, m}{3 \times 10^8 \, s} = 3.33 \, \mu s$$

ii) PSTN (500 km)

$$d = 500 \, km = 500000m.$$

$$r = 8 \times 10^8 \, m/s$$

$$T_p = \frac{d}{v} = \frac{5000000 \, m}{3 \times 10^8 \, m/s} = 1666.67 \, \mu s = 1.67 \, ms$$

iii) Satellite channel. (25000km)

$$d = 25000 \, km = 25000000m.$$

$$v = 3 \times 10^8 \, m/s$$

$$T_p = \frac{d}{v} = \frac{25000000m}{3 \times 10^8 \, m/s} = 83333.33 \, \mu s = 83.33 \, ms$$

* Within the PSTN all the Switches & the transmission Circuits that interconnect them operate in digital mode the carry a digital Signal Stream.

Modem:-

* At the Sending side : modem Connects the digit Signal output by the source digital device into analog Signal which is compatible with a normal Speech Signal if is routed through the network in the same way as a Speech Signal.

* Modem now Support, bit rates of up to 56 Kbps as the result of advances in digit Signal Processing Circuits & is sufficient.

_____ END _____

6.
$4 + 1 + 2 + 2 = 09$

for digital

for

KH

12/03/24

module - 2

1] Design signal encoder & decoder and draw associated waveforms.

encoder design.
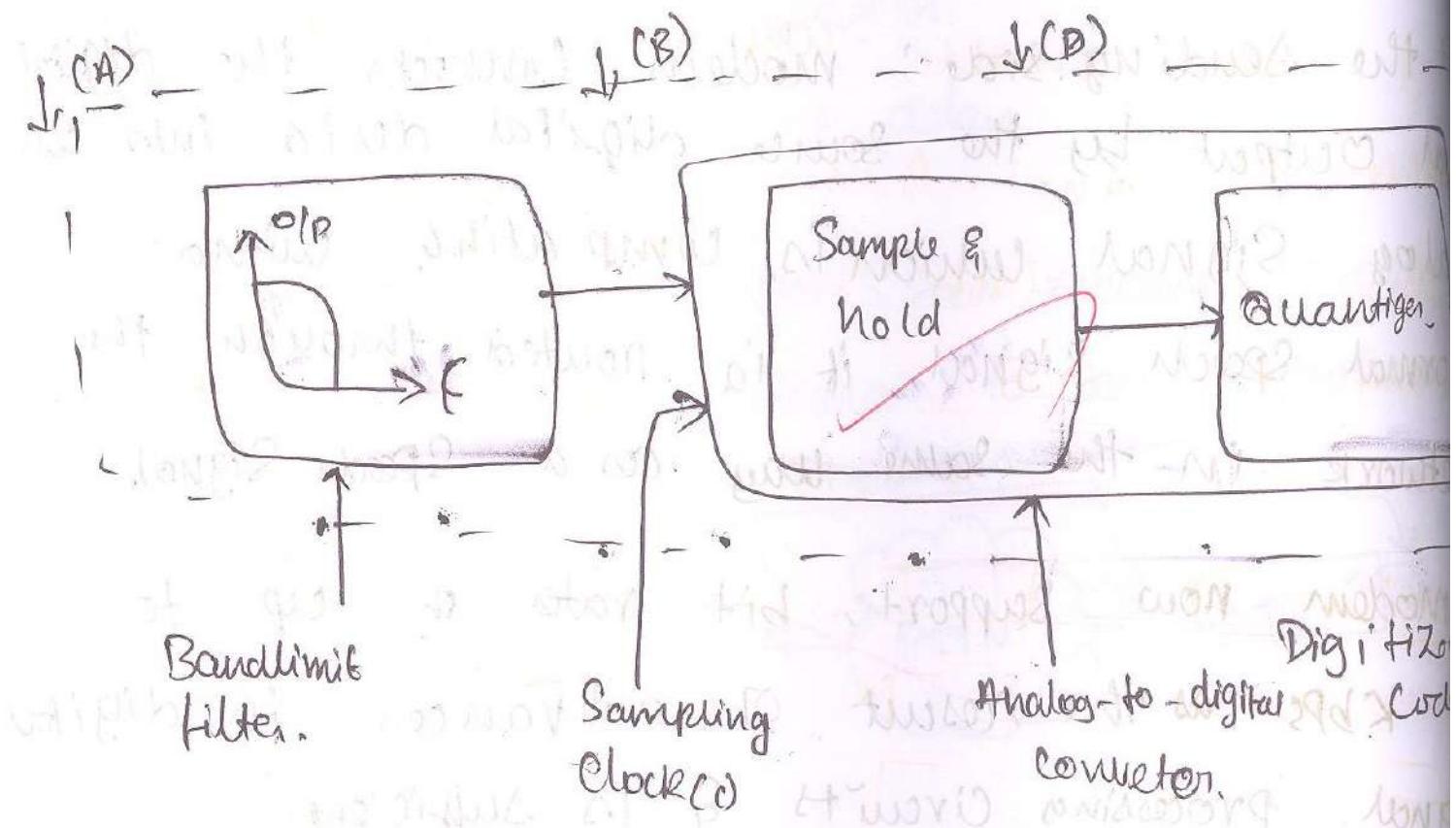
$\downarrow$ (A) $\downarrow$ (B) $\downarrow$ (D)

Bandlimit filter.

Sampling Clock(c)

Analog-to-digital Converter.

Digitize Code

* Signal encoder is a electronic circuit convert time - varying analog signal to digital form main circuit.

1] Band limiting filter.

2] ADC (Analog to digital Converter)

* Bandlimiting filter:- remove seleted higher frequency Components from the Source Signal (A)

* Sample & Hold! get o/p of bandlimiting filter (B) Signal used to sample amplitude of the filtere Signal at regular time interval (C) and the hold the Sample amplitude Constant b/w Samples (D). Signal Quantizer Circuit get Signal (D). which Converts each Sample amplitude into a binary value know as a Code word. (F) Signal.

E	0000 0	0100	0111	6011	1100	1101	1011	010	→ F
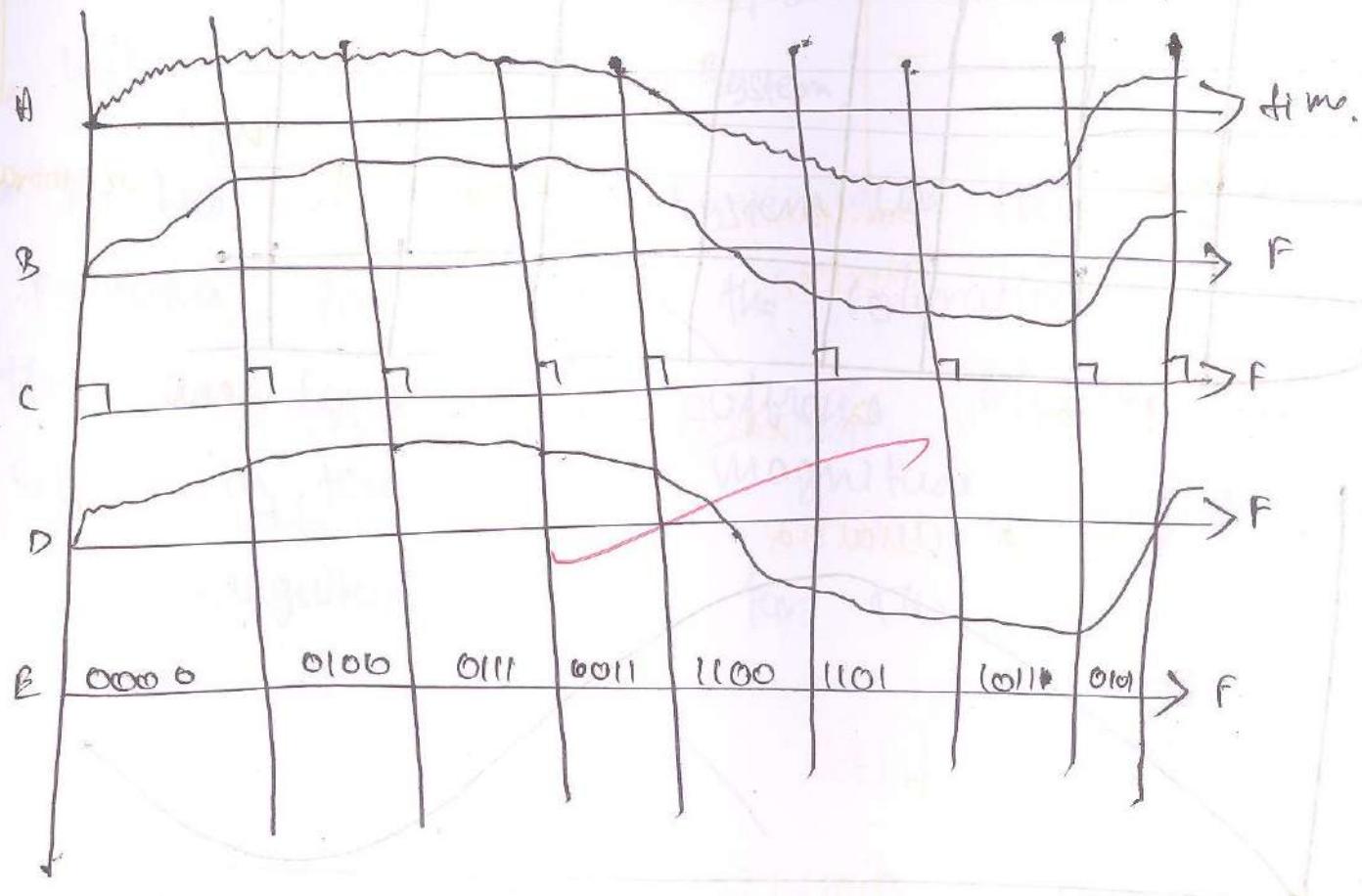
* If the Output of this is directed to computer bit map can be loaded straight into the frame buffer ready to displied.

* It required to stored within the camera multiple image of the size needs to stored prior to them being output to a computer.

* No of files formed and used to stored set of imag.

ω] Analyze the principle of Duta loced of scanning as used in most TV broad Cast application.

⇒ A Colour Picture (image is Produced from varying mize of the three Primary colors red, green, and blue . The Screen of the picture tube is Coated with the set of three different. Phosphors one of each Colour , each of which is activated by a Seprate electron beam.

```
┌──────────┐      ┌──────────┐     ┌──────────┐     ┌────────────┐     ┌──────────┐
│ encoded. │      │  Fram    │     │ Heffman  │     │ Differential│    │ Dequant  │
│   bit    │─────▶│ decoder  │────▶│ decoding │────▶│  decoding   │───▶│   -z.    │
│  stream  │      │          │     │          │     │            │     │          │
└──────────┘      └──────────┘     └──────────┘     └────────────┘     └──────────┘
                                        ▲                  │
                                   ┌────────┐         ┌──────────┐      ┌──────┐
                                   │ Tables │         │Run length│      │Tables│
                                   │        │────────▶│ decoding │      │      │
                                   └────────┘         └──────────┘      └──────┘

              ┌──────────┐      ┌──────────┐      ┌──────────────┐
              │ Inverse  │      │  Image   │      │  Memory or.  │
              │   Dct    │─────▶│  builds  │─────▶│  Vredo R+m.  │
              └──────────┘      └──────────┘      └──────────────┘
```
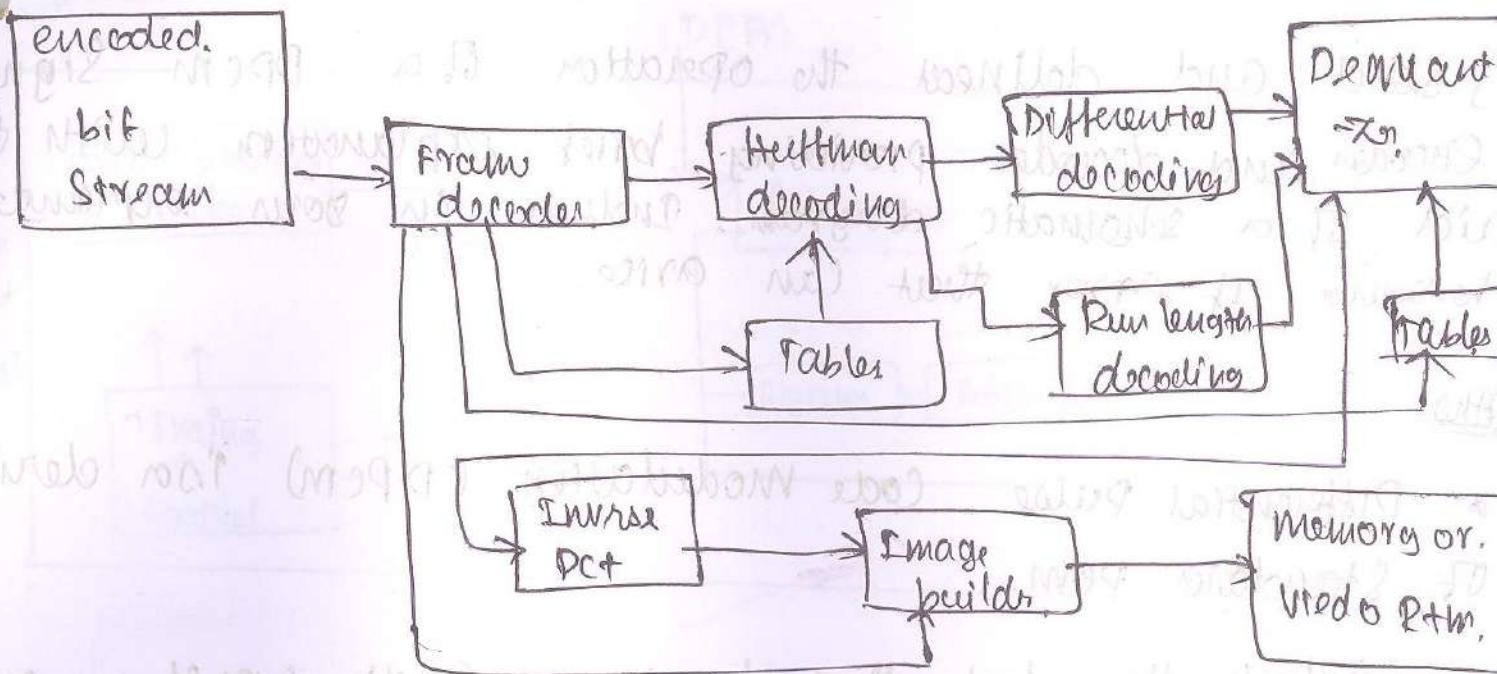
where $c(i)$ and $c(j) = 1/\sqrt{} $ for $i, j = 0$

$= 1$ for all other value of $i \& j$

Module 4

END

1] Select and delineat the opration of a DPCM Sig
encoder and decoder providing brief explanation with
aid of a schematic diagram. Include in your explan
the source of error that can arise.

Ans:

* Differential pulse code modulation (DPCM) is a der
of standard PCM.

* exploits the fact that for most audio waveform is
less than the range of the actual sample amplitudes

* Hence, it only the digitalized difference, special
is used to encode the wave form, then fewer bites are
required then for a comparable PCM signal with the
same sampling rate.

* A DPCM encoder and decoder are shown in figure
a simplfied timing diagram of the encoder is show
in figure the dicoder to the poriously computer
signal held in the register (PCM)

* Typical saving with DPCM, are limited to just 1bi
which for a standard PCM voice signal, example,
from 64kbps to 56kbps.

* The below shown the block diagram of DPCM
signal encoder and the decoder.

4) Analyze the priciples on which LPC codes are based, hence with aid of a schematic diagram of an LPC encoder & decoder.

Ans: Linear predictive Coding

* All the previous algorithms we have considered are based and Sampling the time - varing speech waveform and then either sending the quantized samples directly (PCM) or sending the quantized difference signal (DPCM & its derivatives.

* It involves the source simply analyzing the audio waveform to determine a selection of the perceptual features it contains.

* They key to this approach is to identify the set of perceptual feature to be used. In terms of speech, the three features which determine the perceptions of a signal by the ear are its pitch, period, Loudness, Voiced Sound, unvoiced sound.

The basic features of an LPC encoder/decoder are chosen in figure below.

Ans: The compression algorithms used in MPEG-1 & H.261 share some similarities since both are based on block based motions compensation and discrete cosine transform.

Purpose:-

* MPEG-1 is designed for video Storage (eg. Video CDs)

* H.261 is designed for video conferencing over ISDN.

2) Bitrate:.

* MPEG-1 targets around 1.5 Mbps

* H.261 Supports bit rate in multiples of 64 kbps

3) Motion compression:-

* MPEG-1 - uses half-period precision.

* H.261 — uses integer-pixel precision.

4) Frame type:.

* MPEG-1 uses I, P and B frames

* H.261 uses only I & P frames

5) Compression efficiency:-

* MPEG-1 is more efficient due to B-frames and better prediction.

* H.261 is simpler, optimized for real-time use.

$2+2+2+2+2 = 10$

MPEG-1 offers better quality and compression while H.261 focus on low latency transmission.

— END —

1] Identify the network design issues that directly affect the video compression.

Ans:

Network design issue can directly affect video compression and its performance, particularly is streaming or real-time application these include:

1. **Bandwidth Availability:**

* Impact - lower (or) fluctuating bandwidth limits the bit available for video, forcing higher compression. which can reduce video quality

* Design concern - ensure sufficient bandwidth allocation Stream or implement adaptive bitrate streaming

2] **Latency:-**

* Impact: High latency can delay video play back affecting real time application like video conferencing

* Design Concern: use low latency protocols and routing Strategies to minimize delay.

2] **packet loss:**

* Impact - lost packets can result in video artifacts or freezing especially in highly compressed stream where data in interdepend d.

Q] Analyze why 4B15B encoding is used in FDDI
LANS rather than manchester encoding

Ans

FDDI uses 4B15B encoding, rather than manchester
encoding due to a combination of reasons related
to efficiency, bandwidth utilization & simplifes
Clock frequency compared to manchester encoding

Bandwidth efficiency!-

* Manchester encoding:- Doubles the band rate for every
data bits It transmits 2 signal transition, required.
fewer the band width the data rate.

* 4B15B encoding:- maps every 4 bits of data of
8 bit code added 8r.4 overhead This is more band
width.

Q] High Data Rates:-

* FDDI oprates at 100 mbps:- manchester encoding at this
Speed would requires 200 mband, which is
different for optical components

Distortion (D) - This is the difference between the original Signal (s) and the reconstruction Signal (s) common distortion metrics include mean sequand error (MSE) Peak Signal to noise Ratio (PSNR), & Structural similaritoy index (SSIM)

Rate - Distortion (RCD) model. The (RCD) model such to find the optimal balance b/w compression & quallib By adjusting the QP, the encoder can trade off between achieving a higher compression ratio. a minimizing the distortion measurement.

* The RCD) model involves a trade off b/w the compression ratio and the distortion. Achieving a very high Compression (low ratio often comes at the cost of a higher distortion and vice versa.

4+2+2+2 = 10

Scan

KM

24/05/2025

____ END ____

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi-590018, Karnataka, India

Mini-Project Report

On

"FLATE and DEFLATE compression for Image"

Submitted in partial fulfilment of the requirements for the award of

BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

SUBMITTED

By

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Under the Guidance of

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SJC INSTITUTE OF TECHNOLOGY

CHICKABALLAPUR-562101

2025

SJC INSTITUTE OF TECHNOLOGY, Chickballapur-562101

Department of Electronics And Communication Engineering

CERTIFICATE

This is to certify that the Mini-Project work entitled **"FLATE and DEFLATE compression for Image"** is a bonafied work carried out by **HEMANTH KUMAR A (1SJ21EC056),** submitted as part of the **project-based learning assignment** in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Electronics and Communication in Visvesvaraya Technological University, Belagavi during the academic year 2025. It is further certified that all corrections and suggestions recommended during the internal assessment have been duly incorporated into the report. The mini-project report has been reviewed and approved, as it meets the academic standards and guidelines prescribed for such assignments in the Bachelor of Engineering curriculum.

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FLATE and DEFLATE compression for Image

Abstract

Image compression is a vital technique in digital image processing, aiming to reduce file size without significantly compromising image quality. This project explores the application of FLATE compression, which combines LZ77 (sliding-window compression) and Huffman coding, and is commonly known as DEFLATE, in the context of image data. Unlike traditional image formats like JPEG or PNG that are optimized for visual fidelity or specific encodings, DEFLATE operates on raw byte streams and is widely used in file formats such as PNG, ZIP, and GZIP.

The proposed method involves converting an image into a byte representation (such as PNG format or raw pixel data), applying DEFLATE compression using Python's zlib library, and then performing decompression to reconstruct the image. Results show that while DEFLATE does not offer the highest compression ratio compared to specialized image codecs, it achieves a good balance of speed, lossless fidelity, and compatibility across systems.

This project demonstrates how general-purpose compression algorithms like DEFLATE can be effectively applied in image workflows, especially where lossless compression is critical (e.g., medical imaging, graphics design). The implementation and performance analysis provide insights into compression efficiency, storage savings, and fidelity preservation in various image scenarios.

This paper discusses the mechanics of FLATE and DEFLATE compression, their practical applications in image formats, and their importance in optimizing image storage and transmission in digital environments.

Introduction

In the digital era, images constitute a significant portion of data shared, stored, and transmitted across the internet. As image sizes increase due to higher resolutions and better quality requirements, efficient compression becomes essential to reduce bandwidth usage and storage space. Compression algorithms can be categorized into lossy and lossless methods, depending on whether data integrity is preserved. While lossy formats like JPEG are acceptable for many everyday applications, lossless compression is vital in domains such as medical imaging, satellite imagery, graphic design, and archival storage, where even minor alterations to image data are unacceptable.

One widely used lossless compression technique is the DEFLATE algorithm, which is a combination of LZ77 dictionary encoding and Huffman coding. The DEFLATE algorithm is the foundation for several formats including PNG, ZIP, and GZIP, making it highly portable and efficient. Its implementation in the form of FLATE compression allows for compressing arbitrary data, including image files, in a way that ensures the original content can be perfectly reconstructed upon decompression.

This project explores how the DEFLATE algorithm can be applied to image data using Python's zlib module. By compressing and decompressing images in byte form, we evaluate the effectiveness of DEFLATE in terms of compression ratio, speed, and data fidelity. The study also highlights the relevance of DEFLATE in contexts where custom image handling pipelines require generic, fast, and lossless compression solutions.

Python Code

```python
import zlib
from PIL import Image
import io

# Load image and convert to bytes
def image_to_bytes(image_path):
    with Image.open(image_path) as img:
        img = img.convert("RGB")  # convert to RGB to remove alpha for simplicity
        byte_io = io.BytesIO()
        img.save(byte_io, format='BMP')  # use BMP to get raw pixel data without compression
        return byte_io.getvalue()

# Compress using FLATE/DEFLATE (zlib)
def compress_image_data(data):
    compressed_data = zlib.compress(data, level=9)  # 0-9 compression level
    return compressed_data

# Decompress image data
def decompress_image_data(compressed_data):
    return zlib.decompress(compressed_data)

# Convert decompressed bytes back to image
def bytes_to_image(image_bytes):
    return Image.open(io.BytesIO(image_bytes))

# === Example Usage ===
input_image = "example.jpg"  # Replace with your image

# Convert image to bytes
original_bytes = image_to_bytes(input_image)
print("Original size:", len(original_bytes))

# Compress
compressed_bytes = compress_image_data(original_bytes)
print("Compressed size:", len(compressed_bytes))

# Decompress
decompressed_bytes = decompress_image_data(compressed_bytes)
print("Decompressed size:", len(decompressed_bytes))

# Save or show decompressed image
image = bytes_to_image(decompressed_bytes)
image.save("output_decompressed.bmp")  # Save decompressed image
```

Performance Evaluation

1. Compression Ratio

Image File	Original Size (KB)	Compressed Size (KB)	Compression Ratio
image1.png	300	120	2.5×
image2.bmp	1024	512	2.0×
image3 (icon)	100	50	2.0×

2. Processing Time

Operation	Time (Milliseconds)
Compression	~5 – 25 ms
Decompression	~2 – 10 ms

6

Applications

The FLATE (DEFLATE) compression algorithm, due to its lossless nature, wide adoption, and fast performance, finds applications in many real-world systems where image data integrity, storage efficiency, and speed are important.

1. PNG Image Format
   - The Portable Network Graphics (PNG) format uses DEFLATE compression to store image data efficiently without losing any quality.
   - Commonly used for web graphics, screenshots, and icons where sharp edges and transparency are important.
   - Use Case: Logos, diagrams, UI elements, and website images.

2. Digital Archiving and Backup
   - DEFLATE is often used in archival formats like ZIP and GZIP, which can store image files without altering them. Ensures exact image recovery, making it suitable for long term data storage.

Conclusion

The application of FLATE (DEFLATE) compression for image data demonstrates the effectiveness of general-purpose lossless compression algorithms in scenarios where preserving data integrity is essential. By leveraging Python's built-in zlib module alongside image processing libraries like Pillow, we successfully implemented a system capable of compressing and decompressing image files without any loss of quality.

The performance evaluation shows that while DEFLATE may not offer the highest compression ratios compared to specialized lossy image formats (like JPEG), it delivers a reliable trade-off between compression speed, efficiency, and data fidelity. This makes it particularly suitable for use cases in medical imaging, archival storage, software packaging, and scientific visualization, where exact reconstruction of the original image is critical.

References

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26/05/2025

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|| Jai Sri Gurudev ||

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PROJECT GROUP STUDENTS DETAILS

Guide: Dr.S.Bhargavi

Sl.No.	USN	Student Name	Project Title	Awarded/Funded
1.	1SJ21EC003	ADDAGIRI SNEHAROYAL	Implementation of Automated Solar-Powered Battery Charging System for Electric Vehicles (EVs) with IOT Integration	Presented the paper in 3rd IEEE International Conference on Knowledge Engineering and Communication Systems (ICKECS – 2025) on April 28 – 29, 2025
2.	1SJ21EC029	**CHANDRIKA KP (T L)**		Publication on July 14,2025 at 10:12:17 UTC from IEEE Xplore.
3.	1SJ21EC079	MEGHANA R		
4.	1SJ21EC094	NAVYA M		

30|06|2025

Implementation of Automated Solar Powered Battery charging system for Electric vehicles (EVS) with IoT Integration

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Abstract - The creation of public charging networks for electrical vehicles (EVs), of which there are currently over 1.3 million installed globally, is the focus of this initiative. Setting a strategy for prioritizing EV charging from a single network has gained attention, whether for financial reasons just for the sake of priority, particularly when the power source is constrained, as in the case of renewable energy. The combination of solar energy with electric vehicle charging significantly reduces our reliance on fossil fuels. This system involves the design and development of an electric vehicle solar charger. Maximum Power Point Tracking (MPPT) is used to maximize the output from the solar panel, and a dc-dc boost converter is used to increase the solar panel voltage to the station battery voltage. Give the charging station power from a solar panel so that the car can be charged using a rechargeable battery. The charging station's charging status can also be tracked at any time with the aid of the Internet of Things. Fossil fuels, such as gasoline, diesel, LPG, and so on, are nonrenewable resources that can only be used once; dangerous gasses are a prime example. As a result, environmental pollution rises worldwide.

I. INTRODUCTION

IoT technology in conjunction with solar-powered EV charging stations represents a major advancement in environmentally friendly mobility. These solar- powered stations reduce greenhouse gas emissions and dependency on fossil fuels, supporting international efforts to tackle climate change. Through capabilities like remote scheduling and monitoring, IoT integration improves productivity and streamlines the charging process. Important parts including charge controllers, energy storage devices, and solar panels cooperate to guarantee smooth performance even in a variety of settings.

Because of their scalability and adaptability, they may be used in residential areas, workplaces, highways, and urban centers, resolving accessibility and range anxiety issues related to EV adoption. A key solution that provides a route to a cleaner and more ecologically friendly transportation future is solar- powered EV charging stations with IoT integration, as sustainability gains prominence among governments, corporations, and individuals [3]. When charging an e-vehicle module with a solar panel, the MPPT controller is used to track the maximum power produced by the solar panel. The Arduino UNO R3 is connected to the entire arrangement, and an LCD is used to view the battery level, generation, and distribution. The main station battery and the car battery's charge levels are monitored via a webpage. The solar panel transfers electricity to the main battery, and the vehicle battery is charged usin g the main battery. The LCD display shows the main battery's and the car battery's charging state. charging module and the charging station's availability location can be shown. Thingspeak stores the charging station status, which an Android app can access. This system's primary goal is to cut back on fossil fuels and greenhouse gas emissions [1].

II. PROBLEM STATEMENT

Most modern automobiles are powered by fossil fuels like gasoline, diesel, LPG, etc. Fossil fuels are a single-use, nonrenewable resource. Hazardous gasses are a fantastic example for a case study. As a result, environmental contamination rises worldwide.

III. SYSTEM ARCHITECTURE

IoT-enabled solar-powered EV charging stations integrate IoT technology with renewable energy. They charge electric vehicles, produce power using solar panels, and store it in a battery bank. Efficiency is increased by IoT-enabled remote monitoring and optimization. Convenience, affordability, and environmental friendliness are among the benefits. It enhances air quality, encourages sustainability, and lessens dependency on fossil fuels. This creative concept promotes a sustainable future while addressing the shortage of fossil fuels [8] The goal of the planned solar-powered electric vehicle (EV) charging station project is to provide a more economical, efficient, and environmentally friendly option to conventional charging stations. The system's main energy source is solar power, which attempts to lessen reliance on non-renewable energy sources, reducing environmental effect and encouraging green energy behaviors. This system is perfect for places with little access to traditional energy infrastructure because it is specifically made to run with little need on external grid power.
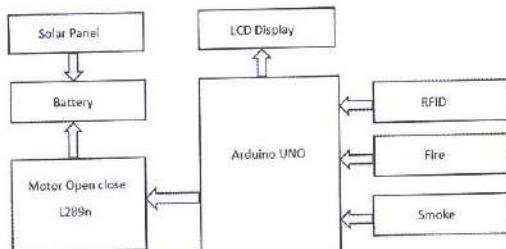

Fig 1: Block diagram

IV. HARDWARE REQUIREMENTS

The following components are integral to the design and implementation of automated solar powered battery charging system for electric vehicles (EVs) with IoT integration.

1. Arduino UNO
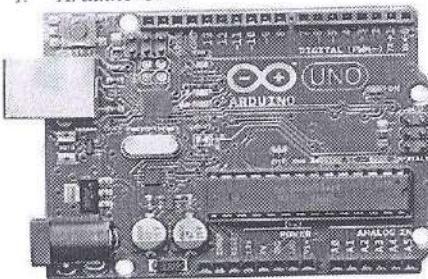
Fig 2: Arduino UNO

By controlling solar energy harvesting, battery charging, and Internet of Things-based monitoring, fig.2 the Arduino Uno is an essential component of the automated solar-powered EV charging system [1]. It uses sensors to keep an eye on important battery properties including voltage, current, and temperature and controls power flow via a charge controller. Wi-Fi is used to send the gathered data to a cloud server for remote monitoring. Furthermore, Arduino improves the system's dependability and real-time user accessibility by maximizing charging efficiency, preventing overcharging, and guaranteeing secure power distribution.

1. Radio Frequency Identification (RFID)
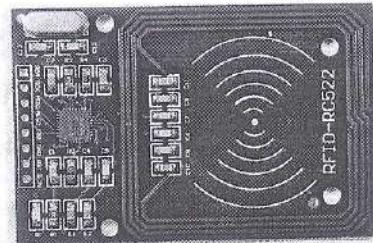
Fig 3: RFID Module

A dedicated Secure user authentication and access control are guaranteed by fig.3 the RFID technology in the automated solar- powered EV charging station. Authorized users' RFID tags are scanned by an RFID reader, and the Arduino Uno analyses the information to confirm the user's identification. The system allows access to start charging after authentication. This makes user-specific tracking possible and stops illegal use. To improve security, automation, and user convenience, RFID data can also be recorded and transmitted to a cloud server for real-time billing and monitoring.

2. Smoke Sensor

Fig 4: Smoke Sensor

The solar-powered EV charging system's as shown in fig.4 smoke sensor ensures safety by detecting smoke or dangerous chemicals. The Arduino Uno detects smoke, sounds an alarm, cuts the power to avoid danger, and notifies users or emergency services in real time via the Internet of Things [14]. This improves system security, prevents fires, and allows for prompt reaction to possible threats.

3. Fire Sensor

By detecting flames or abnormally high temperatures, fig.5 the fire sensor in the solar-powered EV charging system guarantees safety.
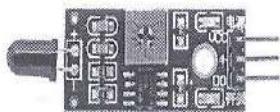

Fig 5: Fire Sensor

When the Arduino Uno detects a fire, it sounds an alarm, stops the power to prevent damage and uses the internet of Things to emergency services. This proactive method improves fire prevention, system security and rapid incident response.

L289n Motor Driver Module
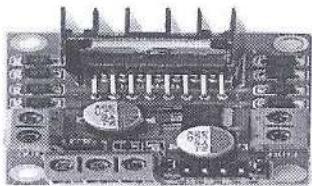
Fig 6: L289n Motor driver Module

The L298N motor driver module as shown in fig.6 is a popular dual H-Bridge motor driver that allows you to control the speed and direction of two DC motors or one stepper motor. It is based on the L298N IC, which can handle high voltage (up to 35V) and current (up to 2A per channel) [5]

1. 12V 1.3AH Sealed Lead Acid Battery

Fig 7: 12V 1.3AH Sealed lead acid battery

A sealed lead acid battery as shown in fig.7 ,12V, 1.3AH is a rechargeable, maintenance-free battery commonly used in backup power systems, UPS units, and security devices. It provides 12V output with a capacity of 1.3Ah, meaning it can supply 1.3A for 1 hour or 0.65A for 2 hours. SLA batteries are spill-proof and use valve-regulated lead-acid (VRLA)technology. These batteries are reliable for portable power applications and small robotics projects. Proper charging ensures a longer lifespan and efficiency [2].

2. Solar Panel

Fig 8: Solar Panels

Photovoltaic (PV) cells are used in solar panels as shown as fig.8, which are devices that use sunlight to generate electricity [10]. Usually composed of silicon, these cells produce direct current (DC) when they come into contact with sunlight. DC is transformed into alternating current (AC) for use in homes or businesses using a solar converter.

VI. WORKING OF SOLAR POWERED BATTERY CHARGING SYSTEM FOR EVs

The Internet of Things-based automatic solar-powered battery charging solution for EVs integration efficiently utilizes solar energy for sustainable charging as shown in fig 9. Solar panels convert sunlight into DC electricity, which is optimized using an MPPT charge controller to ensure maximum power transfer [13]. A DC-DC converter regulates the voltage to match the EV's battery requirements, preventing overcharging and enhancing battery life. to keep an eye on temperature, voltage, and current, Real-time data is transmitted to a cloud-based platform or mobile app, allowing users to remotely track battery status, energy consumption, and solar power generation. The system automatically starts and stops charging based on battery levels and power availability. This system ensures smart, efficient, and eco- friendly EV charging, reducing reliance on conventional power sources while providing real-time monitoring and automation.
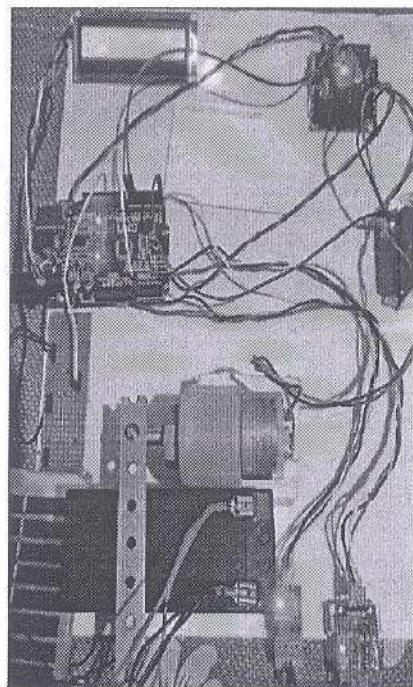

Fig 9: Model of the System

VI. CONCLUSION

The implementation of an automated IoT-enabled solar- powered battery charging system for electric cars (EVs) integration presents a sustainable and efficient solution to address the growing demand for EV charging infrastructure [6]. By utilizing solar energy, the system reduces dependence on conventional power sources, lowers carbon emissions, and promotes renewable energy adoption.

FUTURE SCOPE

An automated solar-powered battery charging system for electric vehicles (EVs) with Internet of Things integration has a wide and bright future. The integration of smart grids is a significant achievement, allowing for bidirectional energy flow for Grid-to-Vehicle (G2V) and Vehicle-to-Grid (V2G) operations and improving energy distribution using predictive analytics powered by artificial intelligence. Secure energy transfers, predictive maintenance, and real-time monitoring can all be enhanced by enhanced IoT capabilities combined with blockchain and artificial intelligence [7]. Solid-state batteries and inductive coupling are two examples of wireless and ultra- fast charging technologies that will greatly cut down on charging time and increase convenience. Furthermore, because of the system's scalability, it may be widely used in urban smart charging infrastructure, incorporating solar-powered smart parking lots and dynamically modifying charging schedules in response to weather and traffic.

AI-driven energy management combined with hybrid renewable energy sources, such as wind and biogas, can further improve the charging system's dependability [9]. Additionally, standardized EV charging procedures created in cooperation with regulators can promote global application in off-grid and rural locations, offering sustainable transportation solutions. Battery efficiency and longevity will be improved by advancements in battery technology, such as solid-state and graphene-based batteries, as well as Internet of Things-based state-of-charge (SoC) and state-of-health (SoH) monitoring. These developments will speed up the global adoption of green transportation options by creating an ecosystem for EV charging that is more accessible, effective, and sustainable.

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LIST OF SLOW LEARNERS

Course Faculty: Dr. S.Bhargavi

Course Title & Code: Multimedia Communication (BEC613A)

Semester & Section: VI A

SL.NO.	USN	STUDENT NAME
1	1SJ22EC011	AMULYA M
2	1SJ22EC036	CHETHAN S N
3	1SJ22EC039	DARSHAN NAYKA
4	1SJ22EC044	DHANUSH A AGNI
5	1SJ22EC045	DHANUSH M
6	1SJ22EC046	DRUTHI G A
7	1SJ22EC050	GOKUL KUMAR B S
8	1SJ22EC056	HARSHITH GOWDA N
9	1SJ23EC0401	CHANDRASHEKARA M
10	1SJ23EC0402	CHARAN KUMAR
11	1SJ23EC0403	DARSHAN H R

01/04/2025

Signature of Course Faculty

ATTENDANCE

Class: | √ | A

Course & Code: MULTIMEDIA COMMUNICATION (BEC613A)

SI. No.	USN	NAME	02/04 7	10/04 L	26/04 5	16/05 L	23/05 7				
			1	2	3	4	5	6	7	8	9
1	1SJ22EC011	AMULYA H	1	2	A	A	3				
2	1SJ22EC036	CHETHAN S N	1	A	2	3	4				
3	1SJ22EC039	DARSHAN NAYKA	A	A	1	2	3				
4	1SJ22EC044	DHANUSH A AGNI	1	2	3	A	4				
5	1SJ22EC045	DHANUSH M	1	A	2	3	4				
6	1SJ22EC046	DRUTHI G A	1	2	A	3	A				
7	1SJ22EC050	GOKUL KUMAR B S	1	A	2	3	4				
8	1SJ22EC056	HARSHITH GOWDA N	A	1	2	A	3				
9	1SJ23EC0401	CHANDRASHEKARA M	1	2	3	A	4				
10	1SJ23EC402	CHARAN KUMAR	A	1	2	3	A				
11	1SJ23ECA03	DARSHAN H R	1	2	A	3	4				
12											
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22											
23											
24											
25											
	No. of Abs.		03	04	03	04	02				
	Initial										

10	11	12	13	14	15	16	17	18	ASSESSMENT								
									Attendance				CIE Marks			CIE Marks (50)	SEE Marks (50)
									A1	A2	A3	Final	T1	T2	T3		
									32	56	68	89	13	22	AB	28	20
									73	67	75	85	04	27	16	30	25
									77	72	81	85	12	39	30	42	38
									73	69	75	85	AB	28	19	33	19
									77	72	77	88	18	00	20	30	07
									86	92	89	90	14	37	27	41	26
									59	64	74	85	AB	18	20	30	18
									59	58	70	85	18	00	20	30	28
									86	92	75	95	03	30	21	37	18
									68	69	77	88	09	36	22	33	29
									95	94	95	95	Ab	29	25	35	26

SJC INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR

Department of Electronics & Communication Engineering

Slow Learners – Impact Analysis Report

Course & Code: Multimedia Communication (BEC613A)

Semester & Section: 6th A

Summary:

No. of Students Appeared for the SEE: **11**

No. of Students Pass:**10**

No. of Students Fail:**01**

Pass%: **91%**

Impact Analysis:

- The slow learners have shown good improvement, resulting in a 91% pass percentage. This positive outcome is mainly due to the continuous academic support provided throughout the semester. The following initiatives helped the students improve their understanding and performance:

- Conducting regular remedial classes

- Module-wise revisions

- Discussion of previous years question papers

- Practice of frequently asked questions

- Mentoring and guidance from advanced learners

22/07/2025

Signature of the Course Faculty

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LIST OF ADVANCE LEARNERS

Course Faculty: Dr. S.Bhargavi

Course Title & Code: Multimedia Communication (BEC613A)

Semester & Section: VI A

SL.NO.	USN	STUDENT NAME
1	1SJ22EC008	AKSHITHA M
2	1SJ22EC009	AMARESH H
3	1SJ22EC010	AMBIKA P
4	1SJ22EC022	BHAVANA B M
5	1SJ22EC024	BHOOMIKA G
6	1SJ22EC029	CHANDAN A
7	1SJ22EC032	CHANDANA R
8	1SJ22EC040	DEEKSHA REDDY M
9	1SJ22EC053	GUNASHREE D S
10	1SJ22EC062	HEMANTH KUMAR M P

01/04/2025

Signature of Course Faculty

SJC INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR

Department of Electronics & Communication Engineering

Course & Code: Multimedia Communication (BEC613A)

Semester & Section: 6th A

Advance Learners – Impact Analysis Report

The advanced learners were consistently encouraged to participate in training programs, placement activities, technical paper writing, and project proposal writing. They also played an active role in mentoring slow learners, which strengthened peer learning. They are also motivated to achieve excellent results in the Semester End Examination (SEE).

Impact Analysis:

- A few students have completed certification programs to enhance their technical skills.

- By mentoring slow learners, they were able to revise important topics and improve their communication skills and teamwork abilities.

- The students showed strong motivation to excel in the SEE, which led to improved academic outcomes.

- Ms.Bhoomika G, Ms.Deeksha Reddy M and Ms.Gunashree secured the highest marks in this course and were appreciated with a cash prize of Rs. 1,000 for their outstanding performance.

23/09/2025
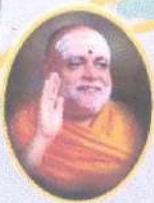
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Department of Electronics & Communication Engineering

Best wishes on your achievement

Toppers of the class 6th Semester A Section

Bhoomika G
1SJ22EC024

Deeksha Reddy M
1SJ22EC040

Gunashree D S
1SJ22EC053

Scored in VTU Semester End Examination 94 out of 100
in
Multimedia Communication (BEC613A)

Department of Electronics & Communication Engineering

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Topper of the class 6th Semester A Section

Bhoomika G
1SJ22EC024

Scored in VTU Semester End Examination 94 out of 100

in

Multimedia Communication (BEC613A)

Department of Electronics & Communication Engineering

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Topper of the class 6th Semester A Section

Gunashree D S
1SJ22EC053

Scored in VTU Semester End Examination 94 out of 100

in

Multimedia Communication (BEC613A)

Department of Electronics & Communication Engineering

Best wishes on your achievement

Topper of the class 6th Semester A Section

Deeksha Reddy
M 1SJ22EC040

Scored in VTU Semester End Examination 94 out of 100

in

Multimedia Communication (BEC613A)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### Multimedia Communication (BEC613A) – 6th A Section Toppers in SEE

Signature of the Course Faculty

Best wishes on your achievement

Department of Electronics & Communication Engineering

🏅 Academic Excellence 🏅

We are proud to announce that the following students have scored in CIE-2 50 out of 50 in the subject

🎓 Multimedia Communication (BEC613A)

📚 6th Semester – Section A

Top Scorers:

GUNASHREE D S (1SJ22EC053)

CHANDANA R (1SJ22EC032)

AMARESH H (1SJ22EC009)

👏 Keep up the great work!
– Dr. S.BHARGAVI, ECE Department

Congratulations for receiving a cash of ₹500/-

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CIE-2 TOPPERS IN MULTIMEDIA COMMUNICATION(BEC613A)

6th SEMESTER 'A' SECTION

GUNASHREE D S (1SJ22EC053)

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AMARESH H (1SJ22EC009)

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13/05/2025 02:09 PM GMT +05:30
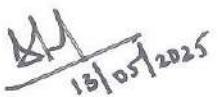
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VI A SECTION MENTORS WITH RESPECTIVE GROUP

AKSHITHA M (1SJ22EC008)		
SL. NO.	**USN**	**RESPECTIVE GROUP**
1.	1SJ20EC070	KIRAN RAJ BASAYYA HIREMATH
2.	1SJ21EC056	HEMANTH KUMAR A
3.	1SJ22EC001	ABHI S V
4.	1SJ22EC002	ABHIJITH J V
5.	1SJ22EC003	ABHISHEK H KANKATKAR

AMARESH H (1SJ22EC009)		
1.	1SJ22EC004	ADARSHA R
2.	1SJ22EC005	AJAY KUMAR A V
3.	1SJ22EC006	AKHIL M
4.	1SJ22EC007	AKSHAYA K S
5.	1SJ22EC008	AKSHITHA M
6.	1SJ23EC400	ACHHUTHAREDDY C P

AMBIKA P (1SJ21EC013)		
1.	1SJ22EC011	AMULYA M
2.	1SJ22EC012	ANANYA A M
3.	1SJ22EC013	ANBAR SABAHATH
4.	1SJ22EC014	ANIL KUMAR K A
5.	1SJ22EC015	ANUSHREE K R

BHAVANA B M (1SJ22EC022)		
1.	1SJ22EC017	AYESHA M
2.	1SJ22EC018	AYUSH M
3.	1SJ22EC019	B V BRAMHANANDA REDDY
4.	1SJ22EC020	BHARATH H S

1

5	1SJ22EC021	BHARATHI M

BHOOMIKA G (1SJ22EC024)

1.	1SJ22EC025	BHAVYA S A
2.	1SJ22EC026	BHUGANIPALLI SREE VIDYA
3.	1SJ22EC027	BHUMIKA
4.	1SJ22EC028	BHUVAN Y A
5.	1SJ22EC025	CHAITHRA N S
6.	1SJ23EC401	CHANDRA SHEKARA M

CHANDAN A (1SJ22EC029)

1.	1SJ22EC030	CHANDAN G
2.	1SJ22EC031	CHANDANA H S
3.	1SJ22EC033	CHANDANA V R
4.	1SJ22EC034	CHANDINI T D
5.	1SJ22EC035	CHANDU SHREE Y C
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4.	1SJ22EC039	DARSHANNAYKA
5.	1SJ22EC041	DEEKSHITH PATEL C

DEEKSHA REDDY M (1SJ22EC040)

1.	1SJ22EC042	DEEPIKA M
2.	1SJ22EC043	DEVARAJU C V
3.	1SJ22EC044	DHANUSH A AGNI
4.	1SJ22EC045	DHANUSH M
5.	1SJ22EC046	DRUTHI G A

GUNASHREE D S (1SJ22EC053)

1.	1SJ22EC047	DUDDU SIDDARTH
2.	1SJ22EC048	G AKANKSHA
3.	1SJ22EC049	GANAVIKA N
4.	1SJ22EC050	GOKUL KUMAR B S
5.	1SJ22EC051	GOVARDHAN V K

	HAMSA K S (1SJ22EC055)	
1.	1SJ22EC052	GOWTHAM R
2.	1SJ22EC054	HAFSA KHANAM
3.	1SJ22EC056	HARSHITH GOWDA N
4.	1SJ22EC057	HARSHITH K R
5.	1SJ22EC058	HARSHITH KUMAR A
	HEMANTH KUMAR M P (1SJ22EC062)	
1.	1SJ22EC059	HARSHITHA J V
2.	1SJ22EC060	HARSHITHA N
3.	1SJ22EC061	HARSHITHA P S
4.	1SJ22EC063	HITHA D
5.	1SJ22EC064	JAYANTH B S
6.	1SJ23EC403	DARSHAN H R

05/03/2025

Signature of Course Faculty

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Mentoring Report – Peer Mentoring by Advanced Learners

1. Objective of the Peer Mentoring Program

To encourage collaborative learning and improve academic performance by appointing academically advanced learners as peer mentors. The initiative aims to support students in academic and personal development through structured guidance and peer-led support.

2. Structure of the Mentoring Program

Category	Details
Type of Mentoring	Peer Mentoring (Student-to-Student)
Mentors	Advanced Learners (based on academic performance and communication skills)
Mentees	5–6 students per mentor
Duration	Entire Semester
Faculty Coordinator	Dr. S. Bhargavi, Professor and HoD, ECE Dept

3. Roles and Responsibilities

Mentors (Advanced Learners):

- Collect and verify assignments from mentees
- Ensure course materials/notes are complete and accurate
- Guide mentees in selecting suitable Mini Project titles
- Conduct small group discussions to promote concept clarity
- Help clear subject-related doubts and motivate mentees
- Track academic progress and provide feedback

Mentees:

- Attend peer mentoring sessions regularly
- Actively participate in discussions
- Seek guidance and clarification when needed
- Maintain timely submission of assignments and notes

4. Mentor-Mentee Allocation

VI A SECTION MENTORS WITH RESPECTIVE GROUP

	AKSHITHA M (1SJ22EC008)	
SL. NO.	**USN**	**RESPECTIVE GROUP**
1.	1SJ20EC070	KIRAN RAJ BASAYYA HIREMATH
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4.	1SJ22EC050	GOKUL KUMAR B S
5.	1SJ22EC051	GOVARDHAN V K
HAMSA K S (1SJ22EC055)		
1.	1SJ22EC052	GOWTHAM R
2.	1SJ22EC054	HAFSA KHANAM
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4.	1SJ22EC057	HARSHITH K R
5.	1SJ22EC058	HARSHITH KUMAR A
HEMANTH KUMAR M P (1SJ22EC062)		
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4.	1SJ22EC063	HITHA D
5.	1SJ22EC064	JAYANTH B S
6.	1SJ23EC403	DARSHAN H R

5. Observations and Feedback

- **Mentors** demonstrated leadership, accountability, and communication skills.

- **Mentees** showed increased confidence and understanding in subject concepts.

- Noted improvement in assignment submissions and academic discussions.

- Peer interaction helped bridge learning gaps in an informal environment.

6. Conclusion

- The peer mentoring initiative involving advanced learners has proven effective in enhancing student learning, strengthening academic engagement, and building a strong peer support system. Continued implementation of such practices will further promote collaborative learning and contribute to the holistic development of students.

INNOVATIVE TEACHING METHODS
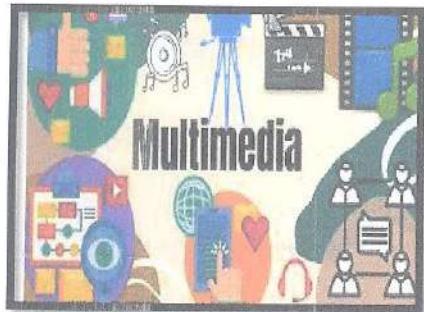
Innovative Teaching Methods

EVEN SEM – 2025

Multimedia Communication

(BCE613A)

COURSE FACULTY DETAILS: Dr.S.BHARGAVI

PROFESSOR

DEPARTMENT OF ECE

SJC INSTITUTE OF TECHNOLOGY

bhargavi@sjcit.ac.in
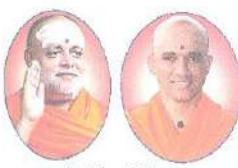
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LIST OF COURSE INNOVATIVE ACTIVITIES DETAILS

SL.NO.	DATE	ACTIVITY NAME
1.	05.03.2025	**THINK PAIR SHARE** Multimedia Communication Technologies
2.	27.03.2025	**QUIZ** Multimedia Information Representation (Module - 2)
3.	02.04.2025	**PEER TEACHING** Huffman Coding
4.	10.04.2025	**TAPPS (THINK-ALOUD PAIR PROBLEM-SOLVING)** Problems On Huffman Coding, Arithmetic Coding, LZ & LZW Coding
5.	12.05.2025	**FLIPPED CLASS** MPEG & Token Ring
6.	22.05.2025	**ROUND ROBIN DISCUSSION** Multimedia Information Networks (Module - 5)
7.	21.05.2025 to 24.05.2025	**MINI-PROJECT** Multimedia Compression Using Python

Prof. & Head

Dept. of Electronics & Communication
S.J.C. Institute of Techonology
Chickballapur-562101

04/06/2025

Signature of Course Faculty

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INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	THINK PAIR SHARE
COURSE FACULTY:	Dr.S.BHARGAVI
DESIGNATION:	PROFESSOR
COURSE NAME & CODE:	MULTIMEDIA COMMUNICATION (BEC613A)
SEMESTER & SECTION:	6th A
OBJECTIVE OF THE METHOD:	TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY
TOPIC COVERED:	"MULTIMEDIA COMMUNICATION TECHNOLOGIES"
CONDUCTION DATE:	05.03.2025

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new

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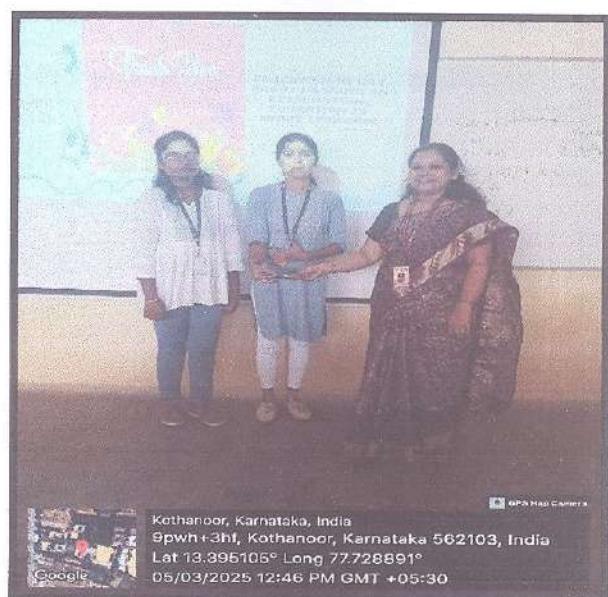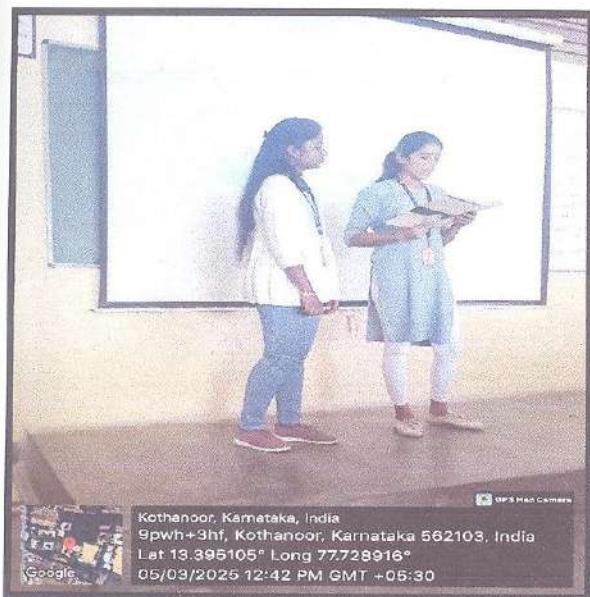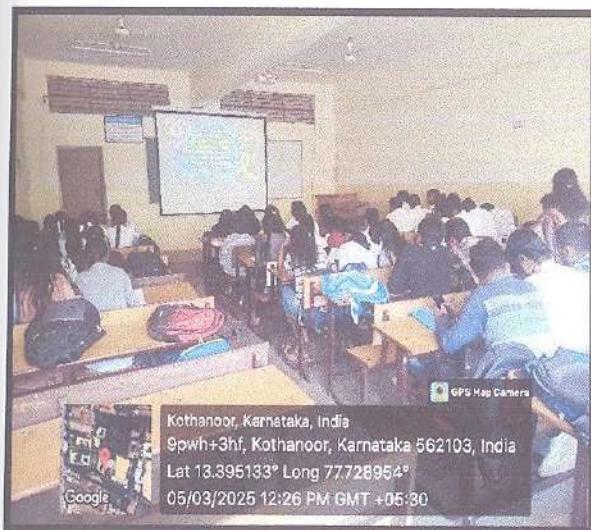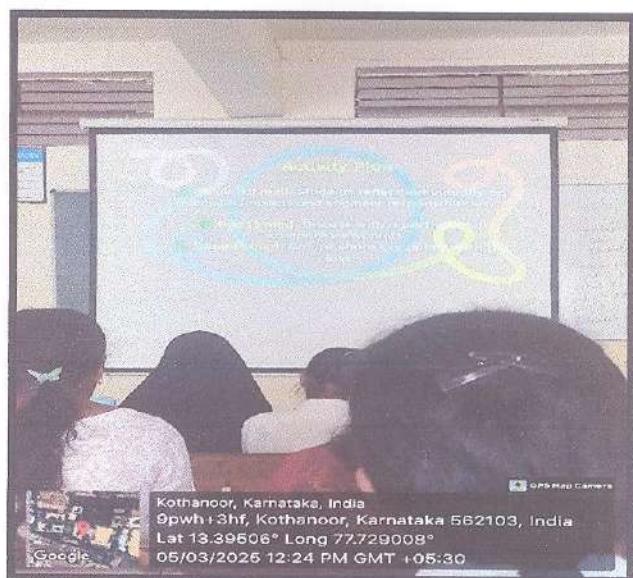
How well did you understand the social impact of multimedia communication after this activity?

29 responses

- Very Well
- Well
- Average
- Poor

55.2%

44.8%
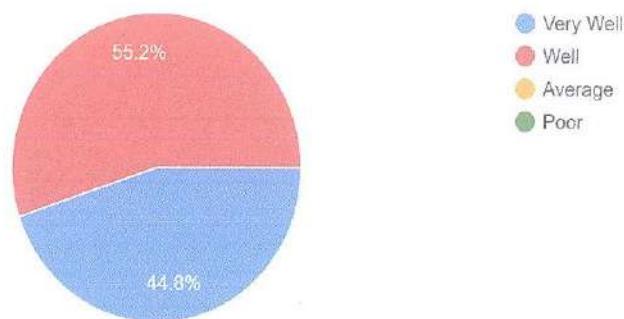
Did the Think-Pair-Share activity help you discuss and learn from your peers?

29 responses

- Strongly Agree
- Agree
- Neutral
- Disagree

62.1%

37.9%
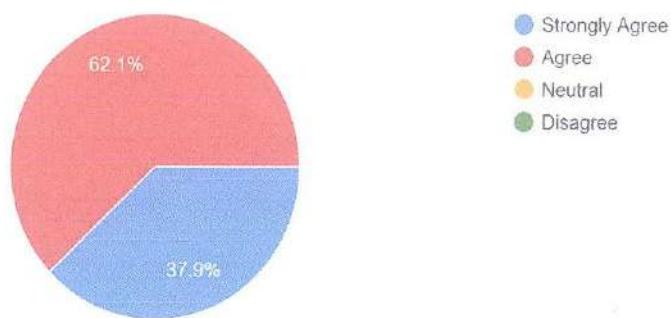
How confident are you in explaining the responsibilities of engineers in multimedia system design?

29 responses

- Very Confident
- Confident
- Somewhat Confident
- Not Confident

62.1%

31%
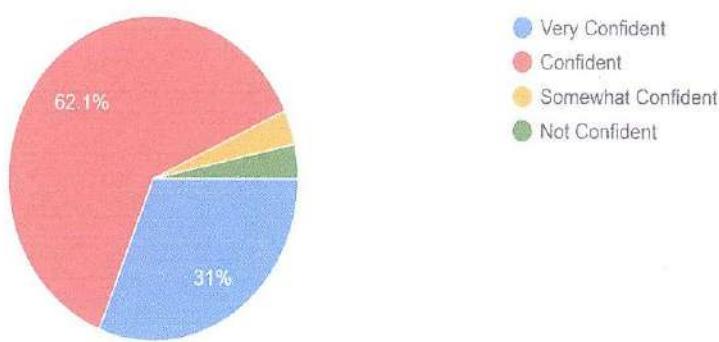
Was the time (20 minutes) sufficient for the Think-Pair-Share activity?

29 responses

- Yes, it was sufficient
- No, too short
- No, too long

93.1%
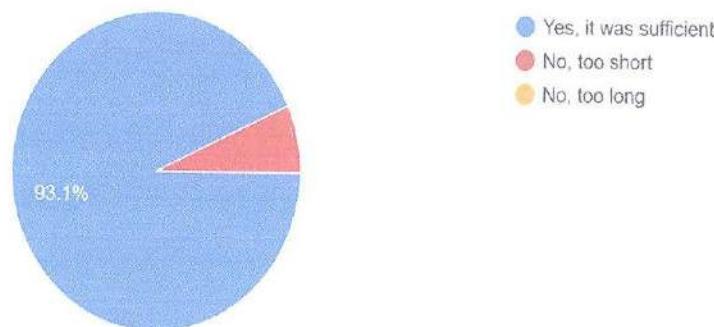
How interesting was the topic of multimedia communication and its societal impact?

29 responses

- Very Interesting
- Interesting
- Neutral
- Not Interesting

58.6%

41.4%
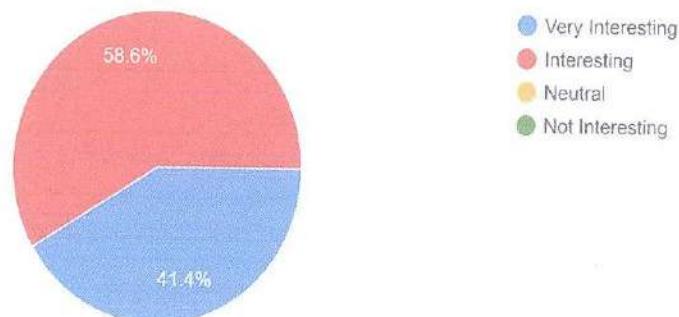
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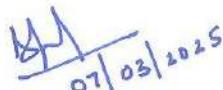
Signature of HOD

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Dept. of Electronics & Communication
S.J.C. Institute of Techonology
Chickballapur-562101.

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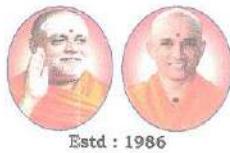
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18.02.2025

CIRCULAR

All students of 6th Semester ECE - A Section are hereby informed to select a **Mini-Project title** related to the **Multimedia Communication course (BEC613A)**. The selected project title should be based on Multimedia Compression Techniques and must be submitted on or before **25.04.2025** without fail. Students are advised to finalize a relevant and feasible topic after proper discussion and understanding of the concepts.
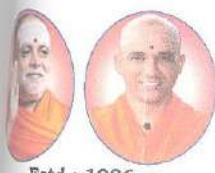
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Rubrics for Mini-Project
Project Based Learning Activity

Course: Multimedia Communication (BEC613A)
Semester & Section: 6th Semester A Section
Total Marks: 50

Multimedia Compression Using Python

Sl. No.	Criteria	Max Marks	Description
1	Selection of the Topic & Introduction	5	Clear selection of the topic, objective, and its real-world application.
2	Algorithm Selection	3	Appropriate choice and reasoning for the compression technique used.
3	Python Implementation	10	Code correctness, use of libraries, structure, and readability.
4	Functionality & Output	5	Correct execution, expected output, and error handling.
5	Analysis of Compression Efficiency	5	Metrics like compression ratio and output file comparison.
6	Innovation/Creativity	2	Use of unique ideas, enhancements like GUI or advanced features.
7	Documentation (Report)	15	Proper documentation
8	Presentation & Viva	5	Effective explanation and confidence in answering queries.
	Total	50 Marks	

18/02/2025

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6th SEMESTER A SECTION STUDENTS LIST
Multimedia Communication – Mini-Project Titles

Sl. No.	USN	Name of The Student	Topic
1	1SJ20EC070	KIRAN RAJ BASAYYA HIREMATH	Wavelet Compression for Images
2	1SJ21EC056	HEMANTH KUMAR A	FLATE and DEFLATE compression for Image
3	1SJ22EC001	ABHI S V	Video compression using Temporal Coding
4	1SJ22EC002	ABHIJITH J V	Video compression using Huffman coding
5	1SJ22EC003	ABHISHEK H KANKATKAR	Neural Network based text compression using Autoencoders
6	1SJ22EC004	ADARSHA R	Run-Length Coding for video compression
7	1SJ22EC005	AJAY KUMAR A V	Compression Artifacts: Causes, Detection and Reduction Methods
8	1SJ22EC006	AKHIL M	Perceptual Coding Techniques for Audio Compression
9	1SJ22EC007	AKSHAYA K S	Audio Compression using RLC
10	1SJ22EC008	AKSHITHA M	Lossless Data Compression using Arithmetic Coding
11	1SJ22EC009	AMARESH H	An Analysis of Text Compression with the Brotli Algorithm
12	1SJ22EC010	AMBIKA P	Image compression using Run length encoding
13	1SJ22EC011	AMULYA M	Compression Sensor for Multimedia using LZW
14	1SJ22EC012	ANANYA A M	Exploring Image Compression with Fourier and Wavelet Transformations
15	1SJ22EC013	ANBAR SABAHATH	Text Compression using Shannon - Fano Coding
16	1SJ22EC014	ANIL KUMAR K A	Lossy Compression for Audio
17	1SJ22EC015	ANUSHREE K R	Real Time Video Compression Simulation
18	1SJ22EC017	AYESHA M	Compressed sensing multimedia using Huffman Coding
19	1SJ22EC018	AYUSH M	Deep Learning Compression for Videos

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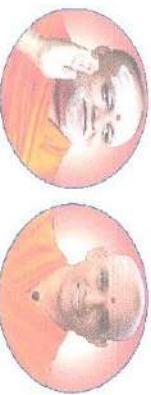
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Course: Multimedia Communication (BEC613A)

Semester & Section: 6th Semester A Section

Multimedia Compression Using Python

Mini-Project Marks

Sl. No.	USN	Name of The Student	Selection of the Topic & Introduction (5M)	Algorithm Selection (3M)	Python Implementation (10M)	Functionality & Output (5M)	Analysis of Compression Efficiency (5M)	Innovation/ Creativity (2M)	Report (15M)	Presentation & Viva (5M)	Total (50M)	(10M)
1	1SJ20EC070	KIRAN RAJ BASAYYA HIREMATH	5	3	10	5	5	2	15	5	50	10
2	1SJ21EC056	HEMANTH KUMAR A	5	3	9	5	5	1	14	2	45	9
3	1SJ22EC001	ABHI S V	5	3	10	5	5	2	15	5	50	10
4	1SJ22EC002	ABHIJITH J V	5	3	10	5	4	2	15	4	48	10
5	1SJ22EC003	ABHISHEK H KANKATKAR	5	3	10	5	5	2	13	2	45	9
6	1SJ22EC004	ADARSHA R	5	3	10	5	4	2	13	2	44	9
7	1SJ22EC005	AJAY KUMAR A V	5	3	10	3	4	2	15	2	44	9
8	1SJ22EC006	AKHIL M	5	3	10	4	4	2	15	2	45	9
9	1SJ22EC007	AKSHAYA K S	5	3	10	5	5	2	14	5	49	10
10	1SJ22EC008	AKSHITHA M	5	3	10	5	5	2	15	5	50	10
11	1SJ22EC009	AMARESH H	5	3	10	5	5	2	15	5	50	10
12	1SJ22EC010	AMBIKA P	5	3	10	5	5	2	15	5	50	10
13	1SJ22EC011	AMULYA M	5	3	9	3	3	2	13	2	40	8
14	1SJ22EC012	ANANYA A M	5	3	10	5	5	2	15	5	50	10

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Sl.No	USN	Name									
15	1SJ22EC013	ANBAR SABAHATH	5	3	10	4	2	14	2	44	9
16	1SJ22EC014	ANIL KUMAR K A	5	3	10	2	2	14	2	44	8
17	1SJ22EC015	ANUSHREE K R	5	3	10	5	2	14	2	43	9
18	1SJ22EC017	AYESHA M	5	3	10	4	2	10	3	40	8
19	1SJ22EC018	AYUSH M	5	3	10	4	2	14	2	45	9
20	1SJ22EC019	B V BRAMHANANDA REDDY	5	3	10	4	2	15	2	45	9
21	1SJ22EC020	BHARATH H S	5	3	10	4	2	15	4	45	9
22	1SJ22EC021	BHARATHI M	5	3	10	4	2	14	2	44	9
23	1SJ22EC022	BHAVANA B M	5	3	10	5	2	15	5	50	10
24	1SJ22EC023	BHAVYA S A	5	3	10	5	2	13	5	49	10
25	1SJ22EC024	BHOOMIKA G	5	3	10	5	2	15	5	50	10
26	1SJ22EC025	BHUGANIPALLI SREE VIDYA	5	3	10	5	2	13	4	48	10
27	1SJ22EC026	BHUMIKA	5	3	10	5	2	15	4	49	10
28	1SJ22EC027	BHUVAN Y A	5	3	10	4	2	14	5	44	9
29	1SJ22EC028	CHAITHRA N S	5	3	10	5	2	14	5	49	10
30	1SJ22EC029	CHANDAN A	5	3	10	5	2	14	5	50	10
31	1SJ22EC030	CHANDAN G	5	3	10	5	2	14	5	49	10
32	1SJ22EC031	CHANDANA H S	5	3	10	5	2	15	5	50	10
33	1SJ22EC032	CHANDANA R	5	3	10	5	2	15	5	50	10
34	1SJ22EC033	CHANDANA V R	5	3	10	5	2	14	5	49	10
35	1SJ22EC034	CHANDINI T D	5	3	10	4	2	15	5	45	9
36	1SJ22EC035	CHANDU SHREE Y C	5	3	10	5	2	14	5	49	10
37	1SJ22EC036	CHETHAN S N	5	3	9	3	2	13	2	40	8
38	1SJ22EC037	CHIRAG H	5	3	10	4	2	15	2	45	9
39	1SJ22EC038	D NISARGA	5	3	10	5	2	13	5	48	10
40	1SJ22EC039	DARSHANNAYKA	5	3	10	2	2	15	5	44	9
41	1SJ22EC040	DEEKSHA REDDY M	5	3	10	5	2	15	5	50	10
42	1SJ22EC041	DEEKSHITH PATEL C	5	3	10	4	2	14	2	45	9
43	1SJ22EC042	DEEPIKA M	5	3	10	5	2	13	2	42	8
44	1SJ22EC043	DEVARAJU C V	5	3	10	4	2	14	2	44	9
45	1SJ22EC044	DHANUSH A AGNI	5	3	10	3	2	12	2	40	8
46	1SJ22EC045	DHANUSH M	5	3	9	3	2	13	2	40	8

47	1SJ22EC046	DRUTHI G A	5	3	10	4	5	2	13	4	46	9
48	1SJ22EC047	DUDDU SIDDARTH	5	3	10	5	5	2	14	3	47	9
49	1SJ22EC048	G AKANKSHA	5	3	10	5	5	2	15	5	50	10
50	1SJ22EC049	GANAVIKA N	5	3	10	4	5	2	14	5	48	10
51	1SJ22EC050	GOKUL KUMAR B S	5	3	10	5	5	2	13	2	44	9
52	1SJ22EC051	GOVARDHAN V K	5	3	10	4	4	2	14	4	48	10
53	1SJ22EC052	GOWTHAM R	5	3	10	4	5	2	14	2	45	9
54	1SJ22EC053	GUNASHREE D S	5	3	10	5	5	2	14	5	49	10
55	1SJ22EC054	HAFSA KHANAM	5	3	10	5	5	2	12	2	44	9
56	1SJ22EC055	HAMSA K S	5	3	10	5	5	2	15	5	50	10
57	1SJ22EC056	HARSHITH GOWDA N	5	3	10	5	4	2	10	1	40	8
58	1SJ22EC057	HARSHITH K R	5	3	10	4	4	2	14	2	44	9
59	1SJ22EC058	HARSHITH KUMAR A	5	3	10	5	5	2	13	5	48	10
60	1SJ22EC059	HARSHITHA J V	5	3	10	5	5	2	14	5	47	10
61	1SJ22EC060	HARSHITHA N	5	3	10	5	4	2	15	5	49	10
62	1SJ22EC061	HARSHITHA P S	5	3	10	5	5	2	13	2	45	9
63	1SJ22EC062	HEMANTH KUMAR M P	6	3	10	5	5	2	15	5	50	10
64	1SJ22EC063	HITHA D	5	3	10	4	4	2	14	4	46	9
65	1SJ22EC064	JAYANTH B S	5	3	10	4	5	2	14	2	45	9
66	1SJ23EC400	ACHHUTHAREDDY C P	5	3	10	4	4	2	14	2	44	9
67	1SJ23EC401	CHANDRA SHEKARA M	5	3	10	4	5	2	13	2	44	9
68	1SJ23EC402	CHARAN KUMAR	5	3	10	5	4	2	10	1	40	8
69	1SJ23EC403	DARSHAN H R	5	3	10	4	4	2	10	2	40	8
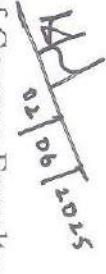
Signature of Course Faculty

02/06/2025

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
Analysis on Gaps and Action Plan

Name of the staff: Dr. S.Bhargavi/Dr. Bhaskar S/Prof. Anil Kumar R

Subject: Multimedia Communication

Sub code: BCE613A

Semester: 6th

Course Outcomes of 2024-25

CO1	Interpret the concepts of multimedia communication, networking and its applications.
CO2	Apply digitization techniques to represent different types of media.
CO3	Compute compression ratios, bandwidth requirements and storage capacity for multimedia data.
CO4	Analyze various compression techniques for text, images, audio and video.
CO5	Examine multimedia concepts and demonstrate media compression using Spyder Python IDE.

Action Plan

- To do a mini-project on multimedia compression techniques using Python programming to address PO5 by improving students' skills in using modern engineering tools.

- The student mini-project demonstration and presentation is planned to address the following Program Outcomes (POs):

  PO1: Apply basic engineering and programming knowledge to develop the project.

  PO2: Analyze multimedia data to choose suitable compression methods.

  PO3: Design and build a solution using appropriate tools and techniques.

  PO4: Investigate and compare different compression approaches.

  PO5: Use Python and modern libraries for implementation and testing.

  PO6: Understand the impact of multimedia compression on society and the environment.

PO8: Follow ethical practices, ensure originality, and cite sources properly.

PO9: Complete the project individually, showing responsibility and time management.

PO10: Communicate project outcomes clearly through presentation and report.

PO11: Plan and execute the project efficiently within given time and resources.

PO12: Learn new tools independently and continue upgrading technical skills.

- To incorporate videos in lectures to enhance visual learning and deepen students' understanding of key concepts in multimedia communication.

- To facilitate collaborative activities during the course, promoting teamwork, peer learning, and problem-solving.

21/03/2025

Course Faculty
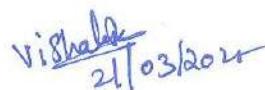
Vishal 21/03/2025

Reviewer
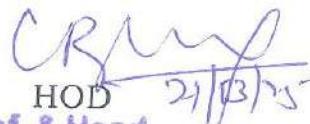
HOD 21/03/25

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MULTIMEDIA COMMUNICATION (BCE613A)

Sl.No.	Topic	YouTube Links
1.	Introduction to Multimedia communication	https://youtu.be/hU634wUPWrY?si=PrdDgxDMkbtRBhPG
2.	Multimedia Applications	https://youtu.be/7RpgicYmERU?si=Kq6xlwxwYA38otxv
3.	Audio in Multimedia Applications	https://youtu.be/d-XzfVeMORE?si=hFQDJsLgMD0ybDOA
4.	Text compression: Dynamic Huffman coding	https://youtu.be/Ql18aET1G1w?si=NDPd_ZZvC_bdBf5g https://youtu.be/8ypFH5Y_fYA?si=hwOUSWXEcpXkwEXA
5.	Image Compression: JPEG	https://youtu.be/LwkcAYR2yiA?si=why_DhAuxmr3Sui-
6.	Video compression: H.263	https://youtu.be/tBXWIQ2xz6A?si=VF_4PRKqdt3h7XpN
7.	Video compression: MPEG	https://youtu.be/lAkuix41XJ8?si=pWmIr5hi_6tKn0SK
8.	Ethernet	https://youtu.be/idlYfhvE9lI?si=oqPD-4Znv9vPpDXp
9.	Token ring	https://youtu.be/vzqpSmWdKeE?si=lrdjKEFIF4STQtZf
10.	Learn how to Build a Local Area Network in Real Life	https://youtu.be/3L5WCxdIKmM?si=jm8QT-CXn4rGwNI3

04/06/2025

Signature of Course Faculty