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**St. JOSEPH'S COLLEGE OF ENGINEERING**  
(An Autonomous Institution)  
**St. Joseph's Group of Institutions**  
OMR, Chennai - 119



**SUMMARY OF CLASS WORK**  
**RECORD OF ATTENDANCE AND ASSESSMENT**

**Name of the staff: Dr. V. Chamundeswari**  
**Department of the Staff: EEE**  
**Semester From: Dec 2023 To April 2024**  
**Class & Branch : III EEE 'C'**  
**Code No. / Subject Name: EE1672 –**  
**Embedded Systems (Integrated Lab)**

Dr. VADDI SESHAGIRI RAO, M.E., M.B.A., Ph.D.  
PRINCIPAL  
ST. JOSEPH'S COLLEGE OF ENGINEERING  
(AN AUTONOMOUS INSTITUTION)  
OLD MAMALLAPURAM ROAD, CHENNAI-600 119.

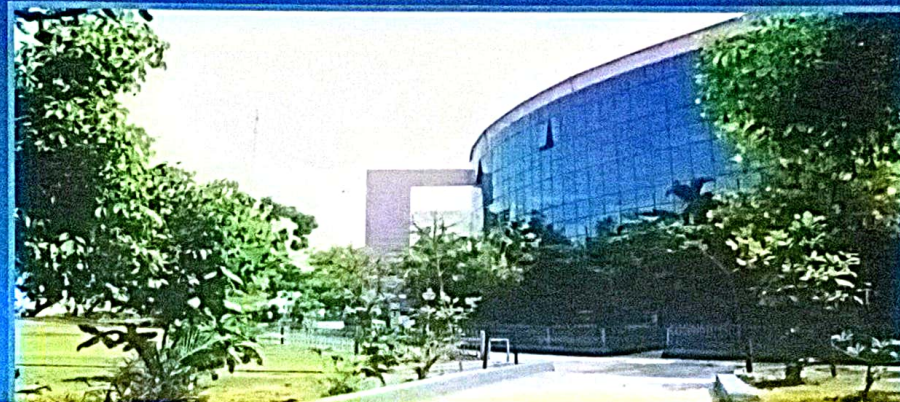


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**SUMMARY OF CLASS WORK RECORD OF ATTENDANCE AND ASSESSMENT**



Name of the Staff: Dr. V. Chamundeswar

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Semester From : Dec '23 To Apr '24

Class & Branch : III EEE 'C'

Code No. / Subject Name : EEEL72 Embedded Systems  
(Integrated Lab)

388



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**EE1672 EMBEDDED SYSTEMS (INTEGRATED LAB)**  
 (Common to EEE and EIE)

LTPC  
 3024

**Objectives:**

- Building blocks of Embedded System.
- Introduction to Embedded processors.
- Bus communication in processors, Input/output interfacing.
- Basics of real time operating system.
- Real-time applications of an embedded system.

**UNIT - I INTRODUCTION TO EMBEDDED SYSTEMS** 9 CO1

Introduction to Embedded Systems –Building blocks of Embedded System, Structural units in Embedded processor, selection of processor & memory devices- DMA – Memory management methods- Timer and Counting devices, Watchdog Timer, Oscillator and Reset Circuits-Real Time Clock. Introduction to a brief study on a typical embedded processor.

**UNIT - II INTRODUCTION TO EMBEDDED PROCESSORS** 9 CO2

Introduction to PIC 16F877A microcontroller: architecture and pin diagram, Overview of instruction sets and addressing modes. Introduction to ARM processor: Architecture and pin diagram of CORTEX processor. Micro-c and Keil compilers for programming using embedded C coding.

**UNIT – III EMBEDDED NETWORKING** 9 CO3

Embedded Networking: Introduction, I/O Device Ports & Buses– Serial Bus communication protocols- RS232 standard – RS422 – RS 485- Inter Integrated Circuits (I2C), Serial Peripheral Interface (SPI), CAN Bus, – USB- Wi-Fi- Bluetooth- Zigbee - need for Device Drivers.

**UNIT - IV RTOS BASED EMBEDDED SYSTEM DESIGN** 9 CO4

Introduction to basic concepts of RTOS- Task, process & threads, interrupt routines in RTOS, Multiprocessing and Multitasking, Pre-emptive and non-pre-emptive scheduling, Task communication shared memory, message passing-, Inter process Communication – synchronization between processes-semaphores, Mailbox, pipes, 133 priority inversion, priority inheritance-Polling and interrupt handling mechanism Overview and comparison of commercial RTOS:VX works- μC/OS-II.

**UNIT - V EMBEDDED SYSTEM APPLICATION AND DEVELOPMENT** 9 CO5

Case Study of Washing Machine- Automotive Application- Smart card System Application-ATM machine –Digital camera.

**THEORY: 45 periods PRACTICAL:30 periods TOTAL: 75 Periods**

**Text Books:**

1. Peckol, "Embedded system Design", John Wiley & Sons, 2010.
2. Lyla B Das, "Embedded Systems-An Integrated Approach", Pearson, 2013.
3. Shibu. K.V, "Introduction to Embedded Systems", Second Edition, McGraw Hill, 2017.
4. Embedded Systems Fundamentals with Arm Cortex M Based Microcontrollers: A Practical Approach Paperback – 1 March 2017.
5. PIC microcontroller and Embedded systems Using Assembly and C for PIC18, second edition, 2021.

**Reference Books:**

1. Raj Kamal, 'Embedded Systems-Architecture, Programming, Design', Second Edition, Mc Graw Hill, 2013.
2. C.R.Sarma, "Embedded Systems Engineering", University Press (India) Pvt. Ltd, 2013.
3. Tammy Noergaard, "Embedded Systems Architecture", Second Edition, Newnes, 2012.
4. Han-Way Huang, "Embedded system Design Using C8051", Cengage Learning, 2009.
5. Rajib Mall "Real-Time systems Theory and Practice" Pearson Education, 2007.



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**SUMMARY OF CLASS WORK**  
**RECORD OF ATTENDANCE AND ASSESSMENT**

Name of the Staff: Dr. V. Chamundeswari

Department of the Staff: EEE

Semester From: Dec'23 To Apr'24

Class & Branch: III EEE 'C'

Code No. / Subject Name: EE1672 Embedded Systems  
Integrated Lab

The performance of the students in this subject in previous years:

S.No.	Month and Year of Exam	Pass percentage	Target pass percentage

**TIME TABLE**

Period → Day ↓	1	2	3	4	5	6	7	8	9	10
Monday										
Tuesday						3C				3C
Wednesday					3C					
Thursday										
Friday										

**LESSON PLAN**

Target Period: 9

Unit-I INTRODUCTION TO EMBEDDED SYSTEMS

Planned Periods: 12

S.NO	Topics to be Covered	Course Outcome	Hours Required	Text / Reference Book	Teaching Aid	Knowledge Level
1	Introduction to Embedded Systems, Definition	C312.1	1	T1	PPT and BB	U
2	The build process for embedded systems, Characteristics of embedded system.		1	T1	PPT and BB	R,U
3	Structural units in Embedded processor		1	T1	PPT and BB	R,U
4	Selection of processor & memory devices with case studies, Different types of Memory		1	T1	PPT and BB	R,U , An & A
5	DMA and its uses		1	T1	PPT and BB	R,U
6	Memory management methods- Pipe, Queue, Circular queue, table, hash table, Memory map.		2	T1	PPT and BB	R,U
7	Timer and Counting devices-Hardware and Software timer		1	T1	PPT and BB	R,U
8	Watchdog Timer, Real Time Clock		1	T1	PPT and BB	R,U
9	In circuit emulator, Target Hardware Debugging- Introduction to a brief study on a typical embedded processor		2	T1	PPT and BB	R,U ,An & A
Assignment submission		Date: 31/1/24				
Seminar		Date: 31/1/24				
Model Exam I		Date: 15/2/24				

# LESSON PLAN

## UNIT IV RTOS BASED EMBEDDED SYSTEM DESIGN

Target Period: 9

Planned Periods: 12

S.NO	Topics to be Covered	Course Outcome	Hours Required	Text/Reference Book	Teaching Aid	Knowledge Level
1	Introduction to basic concepts of RTOS- Basics	C312.4	1	T1,R1	PPT and BB	R,U&An
2	Task, process & threads- Structure of process,		2	T1,R1	PPT and BB	R,U&An
3	Multiprocessing and Multitasking- Types of Multitasking, task scheduling interrupt routines in an RTOS		1	T1,R1	PPT and BB	R,U,A,An&E
4	Preemptive – SRT, RR, Priority Based Scheduling and non-preemptive scheduling-		1	T1,R1	PPT and BB	R,U,A,An&E
5	Task communication, shared memory- Pipes, Memory Mapped object Message passing-		1	T1,R1	PPT and BB	R,U,A,An&E
6	Interprocess Communication – synchronization between processes-Dead lock condition, Live		2	T1,R1	PPT and BB	R,U,A,An&E
7	Semaphores, Mailbox, Pipes		1	T1,R1	PPT and BB	R,U&An
8	Priority inversion, priority inheritance- Polling and interrupt handling mechanism		1	T1,R1	PPT and BB	R,U,A,An&E
9	Comparison of Real time Operating systems: Vx Works, µC/OS- II.		1	T1,R1	PPT and BB	R,U&An
Assignment Submission		Date: 13/3/24				
Seminar		Date: 28/3/24				
Model Exam II		Date: 28/3/24				

# LESSON PLAN

S.No	Title of the Book	Author	Publisher	Year
T1	Embedded system Design	Pectol	John Wiley & Sons	2010
T2	Embedded Systems-An Integrated Approach	Lyda B Das	Pearson	2013
T3	Introduction to Embedded Systems	Shibu. K.V	Tata McGraw Hill	2009
T4	Embedded Systems Fundamentals with Arm Cortex M Based Microcontrollers		APractical Approach paperback	2017
T5	PIC microcontroller and Embedded systems Using Assembly and C for PIC18	Muhammad Ali Mazidi and Rolin D. McKinlay	Pearson Education, second edition	2021
<b>Reference Book: (R)</b>				
R1	Embedded System-Architecture, Programming, Design	Rajkamal	McGraw Hill	2013
R2	Embedded Systems-Encore	S.B.Sarma	University Press (India) Pvt Ltd	2013
R3	Embedded Systems Architecture	Tammy Noergaard,	Elsevier	2006
R4	Embedded system Design Using C8051	Han-Way Huang,	Cengage Learning	2009
R5	Real time systems: Theory and Practice	Rajib Mall	Pearson Education	2007
<b>Content Beyond Syllabus:</b>				
POs strengthened / vacant filled		CO / Unit		
PIC16F877A microcontroller		C312 1 / UNIT – I		
PWM using ARM processor		C312 5 / UNIT – V		
<b>Web source Reference:</b>				
S.No	UNIT	TOPIC	Ref / Link	
1	I, II, III	Memory management methods, CAN	www.edn.com	
2	IV	RTOS	ntel.ac.in/courses/106105036	
3	V	Applications using embedded processors	www.embedded.com	
<b>Self Study topics</b>				
S.No	UNIT	TOPIC	Text / Refbook	
1	I	DMA	TL13	
2	II	RS232	R1	

Model Exam

Date:

STAFF SIGNATURE

HOD-SIGNATURE

PRINCIPAL

# DAILY RECORD OF CLASS WORK

Month & Year : Jan - C

Date*	Day	Allotted Period	Period Handled	Reason for Alteration
	Monday			
	Tuesday			
	Wednesday			
14/12/23	Thursday	1	1	
15/12/23	Friday	-	-	
16/12/23	Saturday	1	1	
18/12/23	Monday	2, 9	2, 9	
19/12/23	Tuesday	6	6	
20/12/23	Wednesday	5	5	
21/12/23	Thursday	1	1	
22/12/23	Friday	-	-	
23/12/23	Saturday	-	-	
24/12/23	Monday			Christmas holidays
25/12/23	Tuesday			
26/12/23	Wednesday			
27/12/23	Thursday			
28/12/23	Friday			
29/12/23	Saturday			
30/12/23	Sunday			

31/1/24	Monday			
2/1/24	Tuesday			
3/1/24	Wednesday	5	5	
4/1/24	Thursday	1	1	
5/1/24	Friday	-	-	
6/1/24	Saturday (Feri)	-	-	
8/1/24	Monday	9	9	
9/1/24	Tuesday	6	6	Manus
10/1/24	Wednesday	5	5	
11/1/24	Thursday	5	5	
12/1/24	Friday	-	-	
13/1/24	Saturday (Holi)	9	9	
14/1/24	Monday			7. Pongal holidays
15/1/24	Tuesday			
16/1/24	Wednesday			
17/1/24	Thursday			
18/1/24	Friday			
19/1/24	Saturday			
20/1/24	Sunday			

\* Holidays / CL and OD days to be mentioned against the corresponding dates

Signature of HOD :

# DAILY RECORD OF CLASS WORK

Month & Year : Jan 2024

Date*	Day	Allotted Period	Period Handled	Reason for Alteration
22/1/24	Monday	4, (9)	4, 9	
23/1/24	Tuesday	6	6	
24/1/24	Wednesday	5	5	
25/1/24	Thursday	4	4	} Holidays
26/1/24	Friday	-	-	
27/1/24	Saturday	-	-	
28/1/24	Monday			
29/1/24	Tuesday			
30/1/24	Wednesday	5	5	
31/1/24	Thursday	1	1	
1/2/24	Friday	4	4	
3/2/24	Saturday	1, 2	1, 2	
5/2/24	Monday	4	4	
6/2/24	Tuesday	10, 9	9, 10	
7/2/24	Wednesday	-	-	
8/2/24	Thursday	1	1	
9/2/24	Friday	2	2	
	Saturday			

12/2/24	Monday			} Holiday
13/2/24	Tuesday			
14/2/24	Wednesday			
15/2/24	Thursday			
16/2/24	Friday			
17/2/24	Saturday	9th hr	9th hr	} prefer diahr
19/2/24	Monday	2	2	
20/2/24	Tuesday	-	-	
21/2/24	Wednesday	5	5	
22/2/24	Thursday	1	1	
23/2/24	Friday	4	4	
24/2/24	Saturday			
26/2/24	Monday	2	2	
27/2/24	Tuesday			
28/2/24	Wednesday	5	5	
29/2/24	Thursday			
1/3/24	Friday	5	5	
2/3/24	Saturday	1	1	

\* Holidays / CL and OD days to be mentioned against the corresponding dates

Signature of HOD :

*[Signature]*







## ATTENDANCE

Roll No.	Reg.No.	Name
Total: 66		
21EE157	312321105122	RAKSHIT ROUSHAN . V
21EE303	312321105123	RAM PRAVEEN . M
21EE228	312321105124	RAMPRASANNA . A
21EE135	312321105125	RANJITH . G . S
21EE251	312321105126	ROSELIN SWATHI . A
21EE307	312321105127	RUPEESH . N
21EE125	312321105128	SAM TONY Z
21EE108	312321105129	SANJAY K
21EE114	312321105130	SANJAY KUMAR . P
21EE256	312321105131	SANTHOSH . B
21EE255	312321105132	SANTHOSH KUMAR . K
21EE234	312321105133	SANTHOSH KUMAR . S
21EE322	312321105134	SARAN . P
21EE310	312321105135	SARAVANA SRINIVAS . V
21EE301	312321105136	SARGURUNATHAN . J . P
21EE328	312321105137	SELVARASU . M
21EE300	312321105138	SENTHAMIZHSELVAN . S
21EE213	312321105139	SHABANA ASMEEN . M . J
21EE326	312321105140	SHANRUTHA . J . A
21EE238	312321105141	SHEERA GRACE . A
21EE271	312321105142	SHERIL . J
21EE113	312321105143	SHIVA . D
21EE144	312321105144	SHREYA TREASA . D
21EE302	312321105145	SHRIMANGALES . U . M
21EE289	312321105146	SHYAM SUNDAR . D

## CONTINUOUS ASSESSMENT MARKS

ASSESSMENT TYPE

DATE

	M-1	M-2	M-3
	1st term	2nd term	3rd term
1-	51		59
2-	60 62		55
3-	75		75
4-	30	45	37 - 1
5-	45 45 ✓	45	54
6-	52	61	67
7-	16	16	35 - 2
8-	45 45 ✓	45	56
9-	53		59
10-	56	47 53	58
11-	52		60
12-	38 45	<del>45</del>	46
13-	68		66
14-	45		66
15-	37	45 45	45
16-	10	15	16 - 3
17-	69		69
18-	63		62
19-	25	57	71
20-	67	62	76
21-	55 58	34 45	66
22-	50	45	49
23-	64	45	22
24-	61 62		65
25-	70	57	50

# ATTENDANCE

Roll No.	Reg.No.	Name	No. of Periods Attended			
			Report Period			
			1	2	3	4
21EE105	312321105147	SHYAM SUNDAR . F <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4</span>				
21EE232	312321105148	SHYAM SUNDAR . M				
21EE235	312321105149	SIBHIRAJ . B				
21EE291	312321105150	SIBHIRAJAN . B				
21EE148	312321105151	SIDHANTH . S.K <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span>				
21EE127	312321105152	SIVA . K <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span>				
21EE226	312321105153	SIVA KUMAR . K <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6</span>				
21EE318	312321105154	SNEGIAPRIYA . A				
21EE275	312321105155	SOBANA . V				
21EE128	312321105156	SOOM SHUDHA . S				
21EE250	312321105157	SOUNDHARTYA . G				
21EE280	312321105158	SOUNDHARVA . K				
21EE320	312321105159	SRENITHY . M.R				
21EE203	312321105160	SRINATH . P <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6</span>				
21EE227	312321105161	SRINIVAS . R				
21EE285	312321105162	SRI SHAKTHI . S.R				
21EE221	312321105163	STEPHAN . F				
21EE103	312321105164	SUHAS . V				
21EE230	312321105165	SUSITHA . T				
21EE317	312321105166	SUVIN RAJ . M				
21EE279	312321105167	TAMIL SELVAN . S				
21EE705	312321105168	THAPATHI SRI . K				
21EE708	312321105169	THIKSHITHA . B				
21EE327	312321105170	THIRUCHSELVAM . R				
21EE118	312321105171	THIRUMALAI . B				

MONTH  
DATE  
PERIOD

		Dec	Dec	Dec	Dec	Dec	Jan	Jan	Jan	Jan	Jan	Jan	Jan	
DATE		14	16	18	20	21	3	4	5	8	10	11	13	22
PERIOD		1	1	20	5	1	5	1	2	9	5	1	9	8
/	/	/	/	/	/	/	/	/	/	/	a	a	a	/
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Total ABSENT														
Total PRESENT														

ENT MARKS				

2













### SUMMARY OF CLASS WORK

DATE: 14/12/23 PERIOD: 1 TOTAL NO. OF CLASS 1 UNIT: 1

- what is ES
- Features of ES

DATE: 16/12/23 PERIOD: 1 TOTAL NO. OF CLASS 1 UNIT: 1

- Components of ES.
- define Embedded system

DATE: 18/12/23 PERIOD: 2 (Total) TOTAL NO. OF CLASS 3 UNIT: 1

- Components of Embedded system
- explained for the entire unit  
Process, Interrupts, Interrupt

### SUMMARY OF CLASS WORK

DATE: 19/12/23 PERIOD: 6 TOTAL NO. OF CLASS 6 UNIT: 1

- Structural units of Embedded processor

DATE: 20/12/23 PERIOD: 5 TOTAL NO. OF CLASS 5 UNIT: 1

- Components of ES (Embedded system)
- Processor → types of processor  
MPP  
ASIP  
RISC

DATE: 21/12/23 PERIOD: 1 TOTAL NO. OF CLASS 5 UNIT: 1


- To select a favorable embedded specification.

Sign of HOD with Date

### SUMMARY OF CLASS WORK

DATE: 3/1/24	PERIOD: 5	TOTAL NO. OF CLASS	6	UNIT: 2
→ Bio-odite st. unit of an sp				
→ IR, TA, etc				
DATE: 4/1/24	PERIOD: 1	TOTAL NO. OF CLASS	7	UNIT: 2
→ Effluents - Ad. processing units				
→ Ad. processing units				
DATE: 5/1/24	PERIOD: 2	TOTAL NO. OF CLASS	8	UNIT: 7
→ DMA				
→ Bykes of DMA				

### SUMMARY OF CLASS WORK

DATE: 8/1/24	PERIOD: 9	TOTAL NO. OF CLASS	9	UNIT: 2
→ Proviron selection				
→ Case studies				
DATE: 10/1/24	PERIOD: 5	TOTAL NO. OF CLASS	6	UNIT: 2
→ Memory selection				
→ case studies				
DATE: 11/1/24	PERIOD: 1	TOTAL NO. OF CLASS	11	UNIT: 2
→ Memory selection.				
→ R.R. factors (Aou)				
				
Sign of HOD with Date				

### SUMMARY OF CLASS WORK

DATE: 13/1/24	PERIOD: 9	TOTAL NO. OF CLASS	UNIT: I
RTC → Real time clock			
DATE: 22/1/24	PERIOD: 4, 9	TOTAL NO. OF CLASS	UNIT: I
NAS7 watch dog timer			
DATE: 24/1/24	PERIOD: 6	TOTAL NO. OF CLASS	UNIT: I
Jafuda as embedded processor → novel type Seminar			

### SUMMARY OF CLASS WORK


DATE: 31/1/24	PERIOD: 5	TOTAL NO. OF CLASS	UNIT: II
Zuhreddeh to unit II PIC MC controller Seminar on a type of processor Assignment submission			
DATE: 1/2/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: II
PIC classification and speed PIC Memory PIC registers			
DATE: 2/2/24	PERIOD: 4	TOTAL NO. OF CLASS	UNIT: II
→ PIC programmer → exp. analysis & program			

Sign of HOD with Date

### SUMMARY OF CLASS WORK

DATE: 3/2/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: 11
PIC Memory & structure → Register of PIC			
DATE: 5/2/24	PERIOD: 4	TOTAL NO. OF CLASS	UNIT: 11
→ PIC Organization → PIC - structure			
DATE: 6/2/24	PERIOD: 9, 10	TOTAL NO. OF CLASS	UNIT: 11
→ PIC Arch → PIC Instructions			

### SUMMARY OF CLASS WORK

DATE: 8/2/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: 11
→ ARM Arch → ARM Instruction → Lecture on Advanced ARM version			
DATE: 9/2/24	PERIOD: 5, 6, 7	TOTAL NO. OF CLASS	UNIT: 11
→ Introduction set of ARM processor - 1 Revision of unit 5			
DATE: 17/2/24	PERIOD: 9	TOTAL NO. OF CLASS	UNIT: 11
Topic distribution and discussion of all audit resolutions			
 Sign of HOD with Date			

**SUMMARY OF CLASS WORK**

19

DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:
21/2/24	2		III
<p>→ Eo7 with overview } Barbara                  → Eo7 with Raspberry Pi }                  Introduction to Unit III                  Embedded Networking - basic concepts</p>			
DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:
21/2/24	5		III
<p>→ Eo7 with Raspberry Pi                  link examples                  No Power hats and buses                  Serial bus communication protocols</p>			
DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:
21/2/24	5		III
<p>RS 232 standards                  { RS 422 and                  RS 485 }</p>			

**SUMMARY OF CLASS WORK**

DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:
23/3/24	1		III
<p>Inter-integrated chip                  I2C bus format                  I2C (CC, SSA) pin explanation</p>			
DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:
24/3/24	7		III
<p>8 PB - Serial peripheral                  Interface                  SPI - MISO, MOSI, diagrammatic                  explanation</p>			
DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:
26/3/24	9		III
<p>CAN - Controller area network                  CAN frame, CAN format bus                  CAN BUS versions</p>			

Sign of HOD with Date

### SUMMARY OF CLASS WORK

DATE: 27/3/24	PERIOD: 4.5	TOTAL NO. OF CLASS	UNIT: (1)
USB - Universal Serial bus Serial bus Communication			
DATE: 28/3/24	PERIOD: 4	TOTAL NO. OF CLASS	UNIT: (1)
Wifi bluetooth, Zigbee Need for Device Drivers Seminar on CAN in Automobiles			
DATE: 29/3/24	PERIOD: I, 3	TOTAL NO. OF CLASS	UNIT: (1), (1)
Introduction to Unit - IV RTOS based system design Introduction to basic concept of RTOS			

### SUMMARY OF CLASS WORK

DATE: 01/3/24	PERIOD: 5	TOTAL NO. OF CLASS	UNIT: (1)
Task process and threads - difference Interrupt mechanism in RTOS Mutual Exclusion and Avoiding - difference			
DATE: 2/3/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: (1)
Task Scheduling types Pre-emptive Non-preemptive and its sub types			
DATE: 7/3/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: (1)
Problems on Scheduling task. Task communication Shared Memory, message passing			

Sign of HOD with Date

### SUMMARY OF CLASS WORK

DATE: 11/3/24	PERIOD: 9	TOTAL NO. OF CLASS	UNIT: IV
Interference Comm. - Rfc Cook Synthesizer Semaphores - Aired exit exam principle			
DATE: 13/3/24	PERIOD: 4	TOTAL NO. OF CLASS	UNIT: IV
Priority Inversion and Inheritance Seminar on key difference betn Fav. and Preemptive			
DATE: 14/3/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: IV
Polling and Interrupts Rndhw mechanism Overview and comparison of RTOS			

### SUMMARY OF CLASS WORK

DATE: 15/3/24	PERIOD: 4	TOTAL NO. OF CLASS	UNIT: IV
vx works - RTOS Scheduling vx-works			
DATE: 16/3/24	PERIOD: 1, 4	TOTAL NO. OF CLASS	UNIT: IV
MC OS - II Scheduling of processes			
DATE: 18/3/24	PERIOD: 2	TOTAL NO. OF CLASS	UNIT: IV
Case study of washing m/c Automated Synchronization - Subhok			

Sign of HOD with Date

### SUMMARY OF CLASS WORK

DATE: 19/3/24	PERIOD: 1	TOTAL NO. OF CLASS	UNIT: 2
Detail of explanation of automatic & smart card system			
DATE: 20/3/24	PERIOD: 5	TOTAL NO. OF CLASS	UNIT: 2
ATM - Automated teller machine, Blockholder and its explanation			
DATE: 21/3/24	PERIOD: 1, 3	TOTAL NO. OF CLASS	UNIT: 2
Digital camera Blockholder and its explanation			

### SUMMARY OF CLASS WORK

DATE: 22/3/24	PERIOD: 5	TOTAL NO. OF CLASS	UNIT: 2
Revision of all units and combine part of unit - 2			
DATE: 5/4/24	PERIOD: 3	TOTAL NO. OF CLASS	UNIT: 2
End of unit 2 and all important. All done -			
DATE:	PERIOD:	TOTAL NO. OF CLASS	UNIT:

*Vts*  
Sign of HOD with Date




## RESULT ANALYSIS


### MODEL EXAMINATION - I

- 1 Date of Exam : 15/2/24
- 2 Total No. of Students : 66
- 3 No of Students Attended : 66
- 4 No of Students Passed : 53
- 5 Percentage of Pass : 80.13 %

## RESULT ANALYSIS

Range of Marks	0 - 44	45 - 60	61 - 75	76 - 90	91 - 100
No. of Students	13	38	15	0	0

Signature of the Staff :   
Name of the Staff : Dr. V. Chandra Sekaran

Signature of the HOD of the Concerned :   
Department with Date :  
(After distributing the answer scripts)


## RESULT ANALYSIS


### MODEL EXAMINATION - II

- 1 Date of Exam : 28/3/24
- 2 Total No. of Students : 57
- 3 No of Students Attended : 37
- 4 No of Students Passed : 31
- 5 Percentage of Pass : 83.78 %

## RESULT ANALYSIS

Range of Marks	0 - 44	45 - 60	61 - 75	76 - 90	91 - 100
No. of Students	06	26	05	0	0

Signature of the Staff :   
Name of the Staff : Dr. V. Chandra Sekaran

Signature of the HOD of the Concerned :   
Department with Date :  
(After distributing the answer scripts)

## RESULT ANALYSIS

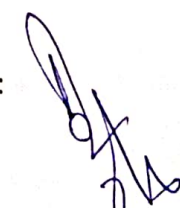
### MODEL EXAMINATION - III

1 Date of Exam : 16/4/24  
 2 Total No. of Students : 66  
 3 No of Students Attended : 66  
 4 No of Students Passed : ~~98.45~~ 63  
 5 Percentage of Pass : 95.45%

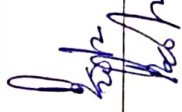




## RESULT ANALYSIS

Range of Marks	0 - 44	45 - 60	61 - 75	76 - 90	91 - 100
No. of Students	03	21	28	11	-

Signature of the Staff :   
 Name of the Staff : Dr. Veksham



Signature of the HOD of the Concerned :   
 Department with Date :  
 (After distributing the answer scripts)

### SYLLABUS COVERAGE

Unit No.	Started on	Completed on	No. of hours	Sign of staff with Date	Sign of HOD with Date
I	12/23	22/1/24	14	vel 22/1/24	
II	31/1/24	9/2/24	12	vel 9/2/24	
III	19/2/24	29/2/24	12	vel 29/2/24	
IV	29/2/24	16/3/24	12	vel 16/3/24	
V	18/3/24	5/4/24	8	vel 5/4/24	

17, 00, 000

### REMARKS

S.No.	Date	Remarks/Comments/Deviations, if any	HOD Signature with Date
16/3/24	9/2/24	Completed for 12 periods and completed in 12 periods due to the discussion regarding project implementation	
	16/3/24	Completed unit B in 6 periods but planned for 12 periods. Due to placement activities for pre-final year students	

Register No: 312321105110

**Question Paper Code : 91223**

**St. JOSEPH'S COLLEGE OF ENGINEERING, CHENNAI - 119**  
(An Autonomous Institution)

B.E./B.Tech. DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2024  
Sixth Semester

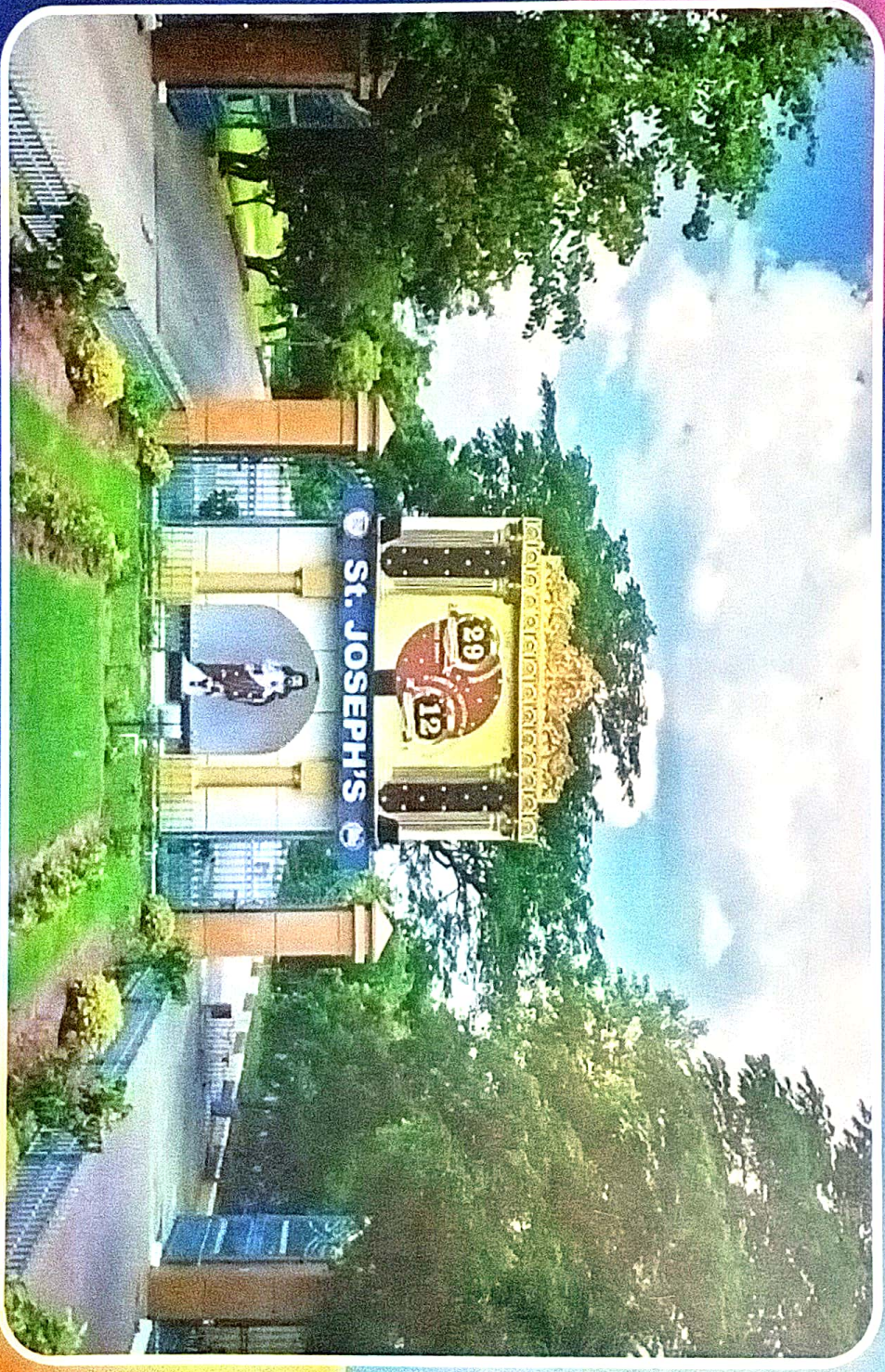
Electrical and Electronics Engineering  
**EE1672 - EMBEDDED SYSTEMS (LAB INTEGRATED)**  
(Common to Electronics and Instrumentation Engineering)  
(Regulations 2021)

Time : Three Hours Maximum : 100 Marks

#### Answer ALL questions

PART - A (10 X 2 = 20 Marks)

1. What is an embedded system?
2. What is the need of Watchdog timer?
3. What is 'W' register in PIC Microcontroller?
4. What is meant by load store architecture?
5. How error is detected in CAN bus?
6. What is I2C?
7. Define Task.





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(An Autonomous Institution)  
**St. Joseph's Group of Institutions**  
OMR, Chennai - 119



**SUMMARY OF LABORATORY WORK**  
**ASSESSMENT AND ATTENDANCE RECORD**

**Laboratory / Workshop : EE1278 Principles of  
Electrical and Electronic Devices Laboratory**

**Year: I EEE E**

**Semester: 02**

**Name of the staff: Mr. T. Sriananda Ganesh, Mr.  
Sreekanth**

**Department of the Staff: EEE**



*You Choose, We Do It*

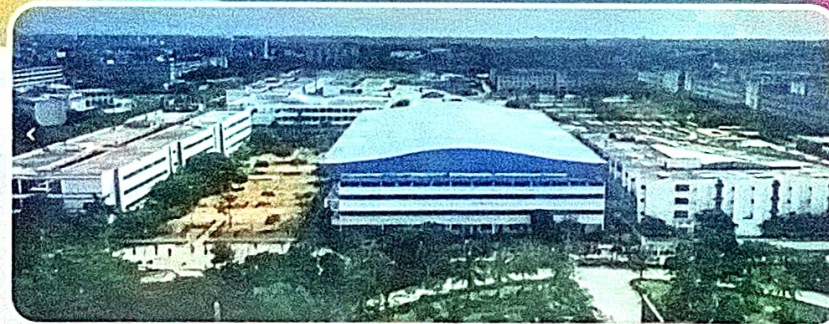
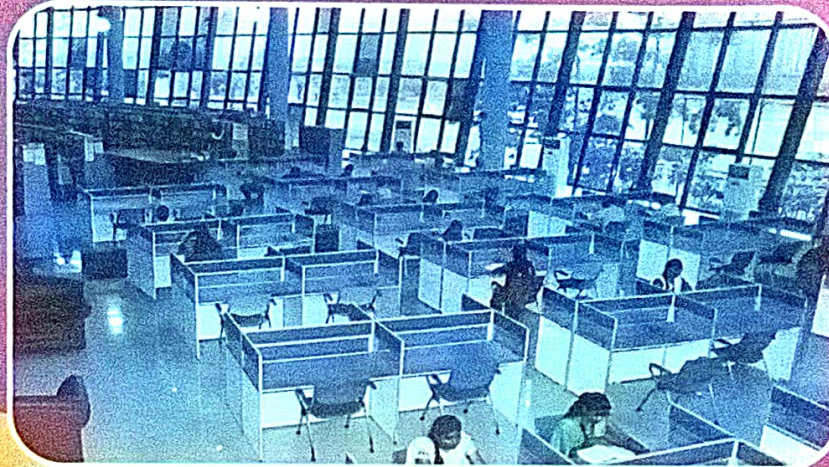
**St. JOSEPH'S COLLEGE OF ENGINEERING**  
(An Autonomous Institution)

*We Make You Shine*

**St. JOSEPH'S INSTITUTE OF TECHNOLOGY**  
(An Autonomous Institution)

**St. Joseph's Group of Institutions**

OMR, Chennai - 119



**SUMMARY OF LABORATORY WORK**  
**ASSESSMENT AND ATTENDANCE RECORD**

Laboratory/  
Workshop : EE1278 - Principles of Electrical, Electronic & Services Lab

Year : I EEE E Semester 02

Name of the Staff: Mr. T. Srikananda Granath, Mr. P. Sreekanth, Mrs. Ramani

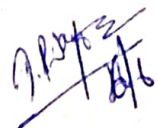

Department : EEE

**EE1278 – PRINCIPLES OF ELECTRICAL AND ELECTRONIC DEVICES LABORATORY**

**Syllabus**

Ex. No.	Name of the Experiment
1	Measurement of equivalent Resistance in an electric circuit
2	Verification of ohm's law
3	Verification of Kirchoff's laws
4	Measurement of magnetic flux in magnetic circuits.
5	Star and delta connections with balanced and unbalanced loads.
6	V-I characteristics of PN junction and Zener Diode.
7	V-I characteristics of SCR
8	V-I characteristics of BJT (CE, CB, CC Configuration).
9	V-I characteristics of FE
10	V-I characteristics of UJT and its application

**LAB COMPLETION DETAILS**

	From	To	Sign of In-charge with Date	Sign of HOD with Date
Cycle 1	27/02/2024	16/04/2024	D. S. A. Ganesh 16/04/24	 16/6
Cycle 2	23/04/2024	21/05/2024	D. S. A. Ganesh 21/05/24	 16/6
Cycle 3				

**TIME TABLE**

10		↑ EE1278 ↓			
9					
8					
7					
6					
5					
4					
3					
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1					
Period / Day	Monday	Tuesday	Wednesday	Thursday	Friday

**PLAN FOR LABORATORY EXPERIMENTS**

**EE1278 – PRINCIPLES OF ELECTRICAL AND ELECTRONIC DEVICES  
LABORATORY**

**Course outcomes (COs) :**

The students will be

CO	COURSE OUTCOMES
CO1	Manipulate simple electric and magnetic circuits.
CO2	Become familiar with the basic ohm's and kirchhoff's law realization.
CO3	Design and Analyse the basic circuit components and connect them to make electrical circuit.
CO4	Ability to Design and construct basic load connections of electrical networks
CO5	To study and analyse the characteristics of various electronic semiconductor de

**MAPPING BETWEEN COs, POs AND PSOs WITH CORRELATION LEVEL 1 / 2 / 3 :**

Course outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	1	1	1	2	1	2	2	3	2
CO2	3	3	3	3	3	2	1	1	2	1	1	3	3	2
CO3	3	3	3	3	3	1	2	1	2	1	2	2	3	2
CO4	3	3	3	3	3	1	1	1	2	1	2	2	3	2
CO5	3	3	3	3	3	2	1	1	2	1	1	3	3	2

**RELATION BETWEEN EXPERIMENT WITH COs :**

Sl. No	Course Content	CO Statement
1	Measurement of equivalent Resistance in an electric circuit	CO1
2	Verification of ohm's law	CO1
3	Verification of Kirchhoff's laws	CO2
4	Measurement of magnetic flux in magnetic circuits.	CO3
5	Star and delta connections with balanced and unbalanced loads.	CO4
6	V-I characteristics of PN junction and Zener Diode.	CO5
7	V-I characteristics of SCR	CO5
8	V-I characteristics of BJT (CE, CB, CC Configuration).	CO5
9	V-I characteristics of FE	CO5
10	V-I characteristics of UJT and its application	CO5

D.S. A. Ganesk.  
STAFF STGN

*[Signature]*  
HOD, STGN

*[Signature]*  
PRINCIPAL



# ATTENDANCE

Roll No.	Reg.No.	Name	Month	02	03	03
			Date	27	05	12
Batch - I			Period	7:30 - 9:15	9:15 - 11:00	11:00 - 12:15
23EE2AI	5060	HARITHA K		/	/	/
248	5062	HARSHITHA VANDI R		/	/	/
295	5065	TASMINE SATHYA P		/	/	/
250	5069	JESLIN ANISTA J		/	/	/
137	5070	JOSELIN ANINO W		/	/	/
276	5071	KAMALTI SRI K		/	/	/
220	5072	KANIMOZHIF S		/	/	/
Batch - II						
719	5073	KANISHKA S		/	/	/
258	5077	LAKSHANA K		/	/	/
129	5078	LAURA HENRIETTA J		/	/	/
256	5082	LOSHINI R		/	/	/
283	5083	MAHALAXMI P		/	/	/
297	5085	MANJUSHRI B		/	/	/
Batch - III						
706	5086	MANJU SREE A		/	/	/
236	5095	MYTHREI JANARTHANAN		/	A	/
118	5098	NANCY PRINCESTANLEY		/	/	/
300	5100	NAVEENA SK		/	/	/
709	5106	OVIVA C		/	/	/
781	5107	PADALA DHONIKA		/	/	/
Batch - IV						
272	5110	PAVITHRA P		/	/	/
290	5111	PRAGIANYA C		/	/	/
			Total Absent			
			Total Present			

Mr. R. S

Mr. R. S											
03	04	04	05	05	05	05	06				
27	02	10	23	09	07	14	21	04			
7:30 - 9:15	9:15 - 11:00	11:00 - 12:15	7:30 - 9:15	9:15 - 11:00	11:00 - 12:15	7:30 - 9:15	9:15 - 11:00	11:00 - 12:15			
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## hop Monitoring Sheet

Staff (1) **Mr. R. Sreeranga**  
 Staff (2) \_\_\_\_\_  
 Staff (5) \_\_\_\_\_

No. of Students :

											MARKS			
14	15	16	17	18	19	20	Attend	Record	Model	Total				
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							5	5						

allowed

NS - Not submitted

# ATTENDANCE

Roll No.	Reg.No.	Name	Month	02	03	03
			Date	27	5	12
			Period	7:20-8:10	9:10-9:50	11:10-11:45
224	5112	PRAHALYA .P		/	/	/
245	5115	PRIYANKA .G		/	/	/
351	5116	PRIYANKA .Y		/	/	/
234	5117	RATESHWARI .R		/	/	/
Batch - V						
285	5063	IMMANUVEL ISAK .B		/	/	/
148	5064	TREAN HUSSAIN .Z.M		/	/	/
783	5066	JAYA PRAKASH .K		/	/	/
842	5067	JEEVA .R		/	/	/
854	5068	JEEVAN KUMAR .D		/	/	/
	5074	KESAVAN .B		A	P	/
BATCH - VI						
218	5075	KISHORE .R		/	/	/
257	5076	KOWSHICK .S		/	/	/
261	5079	LOGARAJA .M		/	/	/
	5080	LOKESH .P		/	/	/
237	5081	LOKESH KUMAR .M		/	/	/
143	5084	MAHESHWARAN .N		/	/	/
BATCH - VII						
219	5087	MANORANTAN .M		/	/	/
146	5088	MEGACHANDRAN .L		/	/	/
268	5089	MEIYARASU .K		/	/	/
294	5090	MOHAMED RAFFEE .T.J		/	/	/
240	5091	MOHAMED SHUAIB .N.M		/	/	/
			Total Absent			
			Total Present			

# Workshop Monitoring Sheet

Staff (1):  
Staff (2):  
Staff (3):

No. of Students:

	03	04	04	04	04	05	05	05	06													
	27	07	16	23	30	07	14	21	04													
	7:15-8:45	9:15-10:45	12:15-1:45	1:45-3:15	3:15-4:45	7:15-8:45	9:15-10:45	12:15-1:45	1:45-3:15													
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											MARKS			
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- Not allowed

NS - Not submitted

## ATTEND

Roll No.	Reg. No.	Name																				
		P																				
892	5092	MOHAMED																				
132	5093	MUKUNT																				
120	5094	MUTHURI																				
138	5096	NADISH																				
130	5097	NAMBIKE																				
		B																				
891	5099	NAVEEN																				
108	5101	NEELAN																				
122	5102	NITHESH																				
126	5103	NITHIN																				
133	5104	NITHISH																				
		BAT																				
147	5105	NITISH N																				
266	5108	PARTHA																				
803	5109	PASUPAT																				
876	5113	PRAVEE																				
117	5114	PRAVEE																				

## Laboratory / Workshop Monitoring Sheet

Class & Branch :  
Lab Name & Code :

Batch : I / II / III

No. of Students :

Staff (1) :  
Staff (2) :  
Staff (3) :

Month  
Date  
Expt. No.

																					MARKS				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Attend	Record	Model	Total		
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NAA - Not allowed to Attend

NA - Not allowed

NS - Not submitted

# SUMMARY OF LABORATORY WORK

CYCLE - 1 BATCH -

GROUP	EXPERIMENT NO.							
	1 Completed Date	2 Completed Date	3 Completed Date	4 Completed Date	5 Completed Date	6 Completed Date	7 Completed Date	8 Completed Date
A1	27/02/24	05/03/24	12/03/24	27/03/24	02/04/24	16/04/24		
A2	16/04/24	27/02/24	05/03/24	12/03/24	27/03/24	02/04/24		
A3	02/04/24	16/04/24	27/02/24	05/03/24	12/03/24	27/03/24		
A4	27/03/24	02/04/24	16/04/24	27/02/24	05/03/24	12/03/24		
A5	12/03/24	27/03/24	02/04/24	16/04/24	27/02/24	05/03/24		
A6	05/03/24	12/03/24	27/03/24	02/04/24	16/04/24	27/02/24		
A7	27/02/24	05/03/24	12/03/24	27/03/24	02/04/24	16/04/24		
A8	16/04/24	27/02/24	05/03/24	12/03/24	27/03/24	02/04/24		
A9	02/04/24	16/04/24	27/02/24	05/03/24	12/03/24	27/03/24		
A10	27/03/24	02/04/24	16/04/24	27/02/24	05/03/24	12/03/24		

*P. S. A. Ganesh*  
Signature of Staff

*P. S. A. Ganesh*  
Signature of HOD

# SUMMARY OF LABORATORY WORK

CYCLE - 2 BATCH -

GROUP	EXPERIMENT NO.							
	1 Completed Date	2 Completed Date	3 Completed Date	4 Completed Date	5 Completed Date	6 Completed Date	7 Completed Date	8 Completed Date
A1	23/04/24	30/04/24	07/05/24	14/05/24	21/05/24			
A2	21/05/24	23/04/24	30/04/24	07/05/24	14/05/24			
A3	24/05/24	21/05/24	23/04/24	30/04/24	07/05/24			
A4	07/05/24	24/05/24	21/05/24	23/04/24	30/04/24			
A5	30/04/24	07/05/24	14/05/24	21/05/24	23/04/24			
A6	23/04/24	30/04/24	07/05/24	14/05/24	21/05/24			
A7	21/05/24	23/04/24	30/04/24	07/05/24	14/05/24			
A8	14/05/24	21/05/24	23/04/24	30/04/24	07/05/24			
A9	07/05/24	14/05/24	21/05/24	23/04/24	30/04/24			
A10	30/04/24	07/05/24	14/05/24	21/05/24	23/04/24			

*P. S. A. Ganesh*  
Signature of Staff

*P. S. A. Ganesh*  
Signature of HOD

