GOKARAJU RANGARAJU
INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electrical & Electronics Engineering

Course Title: MICROPROCESSORS AND MICROCONTROLLERS LAB (GR20A3022)

Following documents are available in Course File.

S.No.	Points	Yes	No
1	Institute and Department Vision and Mission Statements	√	
2	Academic Calendar	√	
3	Subject Allocation Sheet	√	
4	Class Time Table, Individual Timetable (Single Sheet)	√	
5	Syllabus Copy	√	
6	Course Handout	√	
7	CO-PO Mapping	√	
8	Assignment Questions with CO's		√
9	Tutorial Sheets With Solution		√
10	Sessional Question Papers, External Question Paper and Scheme of Evaluation		√
11	Previous University Question Papers		√
12	Best, Average and Weak Answer Scripts for Each Sessional Exam. (Photocopies)	√	
13	CO-PO Attainments for All Mids.	√	
14	Soft Copy of Notes/Ppt/Slides		√
15	Feedback From Students	√	
16	Result Analysis	√	
17	Remedial Action.	√	
18	Course Exit Survey		√

Course Instructor / Course Coordinator   **Course Instructor / Course Coordinator**

Vision of the Institute

To be among the best of the institutions for engineers and technologists with attitudes, skills and knowledge and to become an epicentre of creative solutions.

Mission of the Institute

To achieve and impart quality education with an emphasis on practical skills and social relevance

Vision of the Department

To impart technical knowledge and skills required to succeed in life, career and help society to achieve self sufficiency.

Mission of the Department

1. To become an internationally leading department for higher learning.

2. To build upon the culture and values of universal science and contemporary education.

3. To be a center of research and education generating knowledge and technologies which lay groundwork in shaping the future in the fields of electrical and electronics engineering.

4. To develop partnership with industrial, R&D and government agencies and actively participate in conferences, technical and community activities.

Department of Electrical and Electronics Engineering

This Programme is meant to prepare our students to professionally thrive and to lead.During their progression:

Graduates will be able to

PEO 1: Graduates will have a successful technical or professional careers, including supportive and leadership roles on multidisciplinary teams.

PEO 2: Graduates will be able to acquire, use and develop skills as required for effective professional   practices.

PEO 3: Graduates will be able to attain holistic education that is an essential prerequisite for being a responsible member of society.

PEO 4: Graduates will be engaged in life-long learning, to remain abreast in their profession and be leaders in our technologically vibrant society.

Programme Outcomes (B.Tech. – EEE)

At the end of the Programme, a graduate will have the ability to

PO-1: Ability to apply knowledge of mathematics, science, and engineering.

PO-2: Ability to identify, formulate, analyze engineering problems using engineering sciences.

PO-3: Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety..

PO-4: Ability to design and conduct experiments, as well as to analyze and interpret data with valid conclusions.

PO-5: Ability to utilize experimental, statistical and computational methods and tools necessary for modelling engineering activities.

PO-6: Ability to apply reasoning informed by the relative knowledge to evaluate societal, health, safety, legal and cultural issues and tasks applicable to the professional engineering practice.

PO-7: Ability to adapt broad education necessary to understand the impact of engineering solutions and obtain sustainability in a global, economic, environmental, and societal context.

PO-8: Ability to discover ethical principles and bind to professional and ethical responsibility.

PO-9: Ability to function as an individual and in multi-disciplinary teams.

PO-10: Ability to communicate effectively on complex activities in engineering community and society.

PO-11: Ability to develop Project management principles and apply in various disciplinary environments.

PO-12: Recognition of the need for, and an ability to engage in life-long learning

Program Specific Outcomes(PSOs):

PSO-1: Graduates will interpret data and able to analyze digital and analog systems related to electrical and programming them.

PSO-2: Graduates will able to demonstrate, design and model electrical, electronic circuits, power electronics, power systems and electrical machines.

Gokaraju Rangaraju Institute of Engineering and Technology
(Autonomous)
Bachupally, Kukatpally, Hyderabad – 500 090, India

GRIET/DAA/1H/G/22-23   19 July 2022

Academic Calendar
Academic Year 2022-23

III B.Tech. – First Semester

S. No.	EVENT	PERIOD	DURATION
1	Commencement of First Semester class work	08-08-2022	
2	I Spell of Instructions	08-08-2022 to 08-10-2022	9 Weeks
3	I Mid-term Examinations	10-10-2022 to 13-10-2022	3 Days
4	II Spell of Instructions	14-10-2022 to 12-12-2022	9 Weeks
5	II Mid-term Examinations	13-12-2022 to 15-12-2022	3 Days
6	Preparation	16-12-2022 to 22-12-2022	1 Week
7	End Semester Examinations (Theory/ Practical) Regular/ Supplementary	23-12-2022 to 13-01-2023	3 Weeks
8	Commencement of Second Semester, AY 2022-23	16-01-2023	

III B.Tech. – Second Semester

S. No.	EVENT	PERIOD	DURATION
1	Commencement of Second Semester class work	16-01-2023	
2	I Spell of Instructions	16-01-2023 to 16-03-2023	9 Weeks
3	I Mid-term Examinations	17-03-2023 to 20-03-2023	3 Days
4	II Spell of Instructions	21-03-2023 to 29-04-2023	6 Weeks
5	Summer Vacation	01-05-2023 to 20-05-2023	3 Weeks
6	II Spell of Instructions Contd	22-05-2023 to 12-06-2023	3 Weeks
7	II Mid-term Examinations	13-06-2023 to 15-06-2023	3 Days
8	Preparation	16-06-2023 to 22-06-2023	1 Week
9	End Semester Examinations (Theory/ Practical) Regular / Supplementary	23-06-2023 to 15-07-2023	3 Weeks
10	Commencement of IV B.Tech First Semester, AY 2023-24	17-07-2023	

Dean Academic Affairs

Copy to Principal, All HoDs, CoE

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Electrical and Electronics Engineering

2022 -23 I sem Subject allocation sheet

II YEAR(GR20)	Section-A	
Electrical Circuit Analysis	G Sandhya Rani	
Principles of Analog Electronics	P Ravikanth	
DC Machines and Transformers	Dr Phaneedra Babu B	
Electromagnetic Fields	Dr T Suresh Kumar	
Power Generation and Transmission	V Vijaya Rama Raju	
Java Programming for Engine	CSE Dept. Staff	
Constitution of India	D Karuna Kumar	
Value Ethics and Gender Culture	M Prashanth	
Principles of Analog Electronics Lab	U Vijaya Lakshmi/ M Prashanth	
DC Machines and Transformers Lab	V Vijaya Rama Raju / M Rekha	
III YEAR (GR20)	**Section-A**	
Power System Analysis	Dr J Sridevi	
Power Electronics	Dr Pakkiraiah B	
Microproces sors and Microcontrol lers	Dr D Raveedhra	
Electrical and Hybrid Vehicles (PE-1)	Dr D G Padhan	
Cloud Computing (NPTEL)	P Ravikanth	
Power Systems Lab	Dr J Sridevi / V Usha Rani/ U Vijaya Lakshmi	
Power Electronics Lab	Dr Pakkiraiah B/ G Sandhya Rani	
Microproces sors and Microcontrol lers Lab	Dr P Srividya Devi/ M N Sandhya Rani	
IV YEAR(GR18)	**Section-A**	**Section-B**
Power Systems – III	Dr P Srividya Devi	P Prashanth Kumar
Electronics Design	Dr D S N M Rao	Dr D S N M Rao
Electrical and Hybrid Vehicles (PE-III)	D Srinivasa Rao	D Srinivasa Rao
High Voltage Engineering (PE-IV)	A Vinay Kumar	A Vinay Kumar
Robotics	Anitha (Mech)	
Database Management Systems	D Swathi (CSE)	
Electronics Design Lab	P Ravikanth /Dr DSNM Rao	D Karuna Kumar/ V Usha Rani
Project work - (PhaseI)	A Vinay Kumar/ D Srinivasa Rao	M N Sandhya Rani / G Sandhya Rani
I/I BEE(GR20)	**Theory**	**LAB**

EEE (1) BEE	R Anil Kumar/ P Praveen Kumar / P Prashanth Kumar/ K Sudha
ECE (3) BEE	
IT (3) BEE	
CSBS (1) PEE	
Design Thinking	Dr D G Padhan
Mech II/I (GR20)	A
BEEE	M N Sandhya Rani

Dr Phaneendra Babu B
HOD,EEE

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Electrical and Electronics Engineering

GRIET/PRIN/06/G/01/22-23   **Wef : 08th Jul 2022**

BTech - EEE - A   **III Year - I Semester**

DAY/ HOUR	9:00 - 9:55	9:55- 10:50	10:50 - 11:45	11:45 -12:25	12:25-1:15	1:15 - 2:05	2:05 -2:55	ROOM NO	
MONDAY	PE	PE	EHV	BREAK	PE Lab (A1)/PS Lab (A2)			Theory/Tutorial	4402
TUESDAY	CC	MC	MC		PSA	PSA	Library	Lab	PE Lab (4405) MC Lab (4502) PS Lab (4504)
WEDNESDAY	MC	PSA	Mentoring		PS Lab (A1)/MC Lab (A2)				
THURSDAY	PSA	PSA	PE		MC Lab (A1)/PE Lab (A2)			Class Incharge:	G. Sandhya Rani
FRIDAY	EHV	EHV	CC		Library	MC	MC		
SATURDAY	CC	PE	PE		Library	EHV	EHV		

Subject Code	Subject Name	Faculty Code	Faculty Name	Almanac	
GR20A3012	Power Systems Analysis (PSA)	Dr JSD	Dr J. Sridevi	1st Spell of Instructions	08-08-2022 to 08-10-2022
GR20A3013	Power Electronics (PE)	Dr PB	Dr Pakkiraiah B	1st Mid-term Examinations	10-10-2022 to 13-10-2022
GR20A3014	Microprocessors and Microcontrollers (MC)	Dr DR	Dr D Raveendhra	2nd Spell of Instructions	14-10-2022 to 18-12-2022
GR20A3015	Electrical and Hybrid Vehicles (EHV)	Dr DGP	Dr D. G. Padhan	2nd Mid-term Examinations	09-12-2022 to 13-12-2022
	Cloud Computing (CC)	PRK	P. Ravikanth	Preparation	14-12-2022 to 20-12-2022
GR20A3020	Power Systems Lab (PS Lab)	Dr JSD/ VUR/UVL	Dr J. Sridevi/ V. Usharani/ U. Vijayalakshmi	End Semester Examinations (Theory/ Practicals) Regular / Supplementary	21-12-2022 to 10-01-2023
GR20A3021	Power Electronics Lab (PE Lab)	Dr PB/GSR/MRE	Dr. B. Pakkiraiah/G. Sandhya Rani/M Rekha		
GR20A3022	Microprocessors and Microcontrollers Lab (MC Lab)	Dr PSVD/MNSR	Dr. P. Srividya Devi/ M. N. Sandhya Rani	Commencement of Second Semester, A.Y 2022-2023	16-01-2023

Time Table Coordinator   **HOD**   **DAA**

GOKARAJU RANGARAJU
INSTITUTE OF ENGINEERING AND TECHNOLOGY
Department of Electrical and Electronics Engineering

Faculty Name: Dr P Srividya Devi/M N Sandhya Rani				
DAY/ HOUR	**09.00-09.55**	**09.55-10.50**	**10.50-11.45**	**11.45-12.25**	**12.25-02.55**
MONDAY				LUNCH	
TUESDAY					
WEDNESDAY					MPMC Lab(A2)
THURSDAY					MPMC Lab(A1)
FRIDAY					
SATURDAY					

COURSE OBJECTIVES

Academic Year : 2022-23

Semester : I

Name of the Program: B.Tech Year: III

Course/Subject: Microprocessors and Microcontrollers Lab Course Code: GR20A3022

Name of the Faculty: Dr P Srividya Devi/ M N Sandhya Rani Dept.:EEE

On completion of this Subject/Course the student shall be able to:

S.No	Objectives
1	To introduce the basics of microprocessors and its applications.
2	To provide in depth knowledge of 8051 Microcontrollers.
3	To expertise working with programming.
4	To impart the I/O interfacing concepts for developing real time systems.
5	To encourage the students in building real time applications.

Department of Electrical & Electronics Engineering

COURSE OUTCOMES

Academic Year   :   2022-23

Semester   :   I

Name of the Program   : B.Tech   Year: III

Course/Subject: Microprocessors and Microcontrollers Lab   Course Code: GR20A3022

Name of the Faculty: Dr P Srividya Devi/ M N Sandhya Rani   Dept.:EEE

The expected outcomes of the Course/Subject are:

S.No	Outcomes
1	Familiarize with the assembly level programming using 8086.
2	Judge the difference between Assembly language and Embedded C Programming
3	Design circuits for interfacing different modules to microcontrollers.
4	Experiment 8051 with different types of communicating devices.
5	Execute various programs which can resemble to the real time applications.

GOKARAJU RANGARAJU
INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electrical & Electronics Engineering

GUIDELINES TO STUDY THE COURSE /SUBJECT

Academic **Y**ear   : 2022-23

Semester   :   I

Name of the Program: B.Tech   Year: III

Course/Subject: Microprocessors and Microcontrollers Lab   Course Code: GR20A3022

Name of the Faculty: Dr P Srividya Devi/ M N Sandhya Rani   Dept.:EEE

Guidelines to study the Course/ Subject: Microprocessors and Microcontrollers Lab

Course Design and Delivery System (CDD):

The Course syllabus is written into number of learning objectives and outcomes.

These learning objectives and outcomes will be achieved through lectures, assessments, assignments, experiments in the laboratory, projects, seminars, presentations, etc.

Every student will be given an assessment plan, criteria for assessment, scheme of evaluation and grading method.

The Learning Process will be carried out through assessments of Knowledge, Skills and Attitude by various methods and the students will be given guidance to refer to the text books, reference books, journals, etc.

The faculty be able to –

Understand the principles of Learning

Understand the psychology of students

Develop instructional objectives for a given topic

Prepare course, unit and lesson plans

Understand different methods of teaching and learning

Use appropriate teaching and learning aids

Plan and deliver lectures effectively

Provide feedback to students using various methods of Assessments and tools of Evaluation

Act as a guide, advisor, counselor, facilitator, motivator and not just as a teacher alone

Department of Electrical & Electronics Engineering

COURSE SCHEDULE

Academic **Y**ear   : 2022-23

Semester   : I

Name of the Program: B.Tech   Year: III

Course/Subject: Microprocessors and Microcontrollers Lab   Course Code: GR20A3022

Name of the Faculty: Dr P Srividya Devi/ M N Sandhya Rani   Dept.:EEE

Sl.No	Date	Topics	No of periods
1	10/08/2022	Arithmetic Operations on 16 Bit and 32-Bit Data.	3
2	17/08/2022	Logical Operations on 16 Bit and 32-Bit Data.	3
3	24/08/2022	String Operations on 16 Bit and 32-Bit Data.	3
4	07/09/2022	Bit level Logical Operations	3
5	14/09/2022	Rotate, Shift Operations.	3
6	21/09/2022	Swap and Branch Operations.	3
7	28/09/2022	LED's to 8051.	3
8	12/10/2022	Interfacing LCD to 8051.	3
9	19/10/2022	Interfacing Matrix Keypad to 8051.	3
10	26/10/2022	Interfacing DC Motor to 8051.	3
11	02/11/2022	LEDs interfacing	3
12	09/11/2022	Switches and LED's interfacing	3
13	16/11/2022	2*16 LCD	3
14	23/11/2022	Serial Communication	3
15	30/11/2022	Device control	3
16	07/12/2022	Reading sensors using ADC	3
17	14/12/2022	DC Motor control	3

Department of Electrical & Electronics Engineering

EVALUATION STRATEGY

Academic **Y**ear   :   2022-23

Semester   :   I

Name of the Program: B.Tech   Year: III

Course/Subject: Microprocessors and Microcontrollers Lab   Course Code: GR20A3022

 Name of the Faculty: Dr P Srividya Devi/ M N Sandhya Rani   Dept.:EEE

1. TARGET:

 A) Percentage for pass: 99.7%

 b) Percentage of class: 100%

2. COURSE PLAN & CONTENT DELIVERY:

- Observation & Record
- Doing the Experiments/Projects

3. METHOD OF EVALUATION

   3.1 Continuous Assessment Examinations (CAE-I, CAE-II)

   3.2 Projects

   3.3 Quiz

   3.4 Semester/End Examination

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CO-PO Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
GR20A3022-MICROPROCESSORS AND MICROCONTROLLERS LAB														
1. Familiarize with the assembly level programming using 8086.		H	H		H	H		H	M	M	H	H	H	M
2. Judge the difference between Assembly language and Embedded C Programming	H	H		M	H	H	M		M				H	
3. Design circuits for interfacing different modules to microcontrollers.		H	H	M	H			H	M				H	H
4. Experiment 8051 with different types of communicating devices.	H	H	H				H				M	M		H
5. Execute various programs which can resemble to the real time applications.	M	H	H					H	M	M		H	H	M

COs	Cognitive Learning Levels					
	1	2	3	4	5	6
1			√			
2		√				
3				√		
4						√
5					√	

Cognitive Learning Levels

CLL 1: Remembering

CLL 2: Understanding

CLL 3: Applying

CLL 4: Analyzing

CLL 5: Evaluating

CLL 6: Creating

No. 52709

H.T. No.	2	0	2	4	1	A	0	2	0	5

Name of the Examination III B·Tech, I Sem lab internal Examination.

Course Micro controller Lab.   Branch EEE   Date 07|12|22

Signature of the Invigilator

START WRITING FROM HERE

10

* **Experiment** :- Blinking of LED's with ATMEL Micro Controller. /
Blinking of LED's using 8051 Microprocessor.

Aim :- To observe blinking of LED's using ATMEL
Micro controller. / 8051 micro processor.

Apparatus :-
8051 microprocessor.
Connecting wires.
2 LED's.

Theory :-

- Microcontroller controlls the instructions given by the
user.

• Microprocessor processes the given set of the
instruction.

• Size of Micro Controller is small when Compared to Microprocessor as it has internally connected memory and I/o Ports.

• when Certain set of instructions are given to the Microprocessors it processes and executes them within no time.

• Some Known processors are, INTEL, AMD, SNAPDRAGON, etc -

Procedure:-

1) Open the Simulation Software to perform the Experiment.

2) Carefully read all the instructions one by one.

3) click on the show button to understand the given interface diagram and Sample Code.

4) Copy the Sample Code and paste it in the text editor.

5) Else, write your own assembly language Code in the text editor.

6) To check the Syntax errors, debug option is provided in the Software.

7) In Case of any errors, click on correct the errors and debug it again.

8) After debug if there are no errors, then run the Code.

9) Get the output.

Circuit Diagram :

ATMEL

Pin	Label
1	P1.0
2	P1.1
3	P1.2
4	P1.3
5	P1.4
6	P1.5
7	P1.6
8	P1.7
10	P3.0
11	P3.1
12	P3.2
13	P3.3
14	P3.4
15	P3.5
16	P3.6
17	P3.7
18	XTAL 2
19	XTAL 1
9	RST
20	GND
40	Vcc
39	P0.0
38	P0.1
37	P0.2
36	P0.3
35	P0.4
34	P0.5
33	P0.6
32	P0.7
21	P2.0
22	P2.1
23	P2.2
24	P2.3
25	P2.4
26	P2.5
27	P2.6
28	P2.7
31	Vpp
30	PROG
29	PSEN

LED 1   R1

GND   +5v   C2   C1   GND   C3   R2   RST

LED 2   R3   +5v   Switch   GND
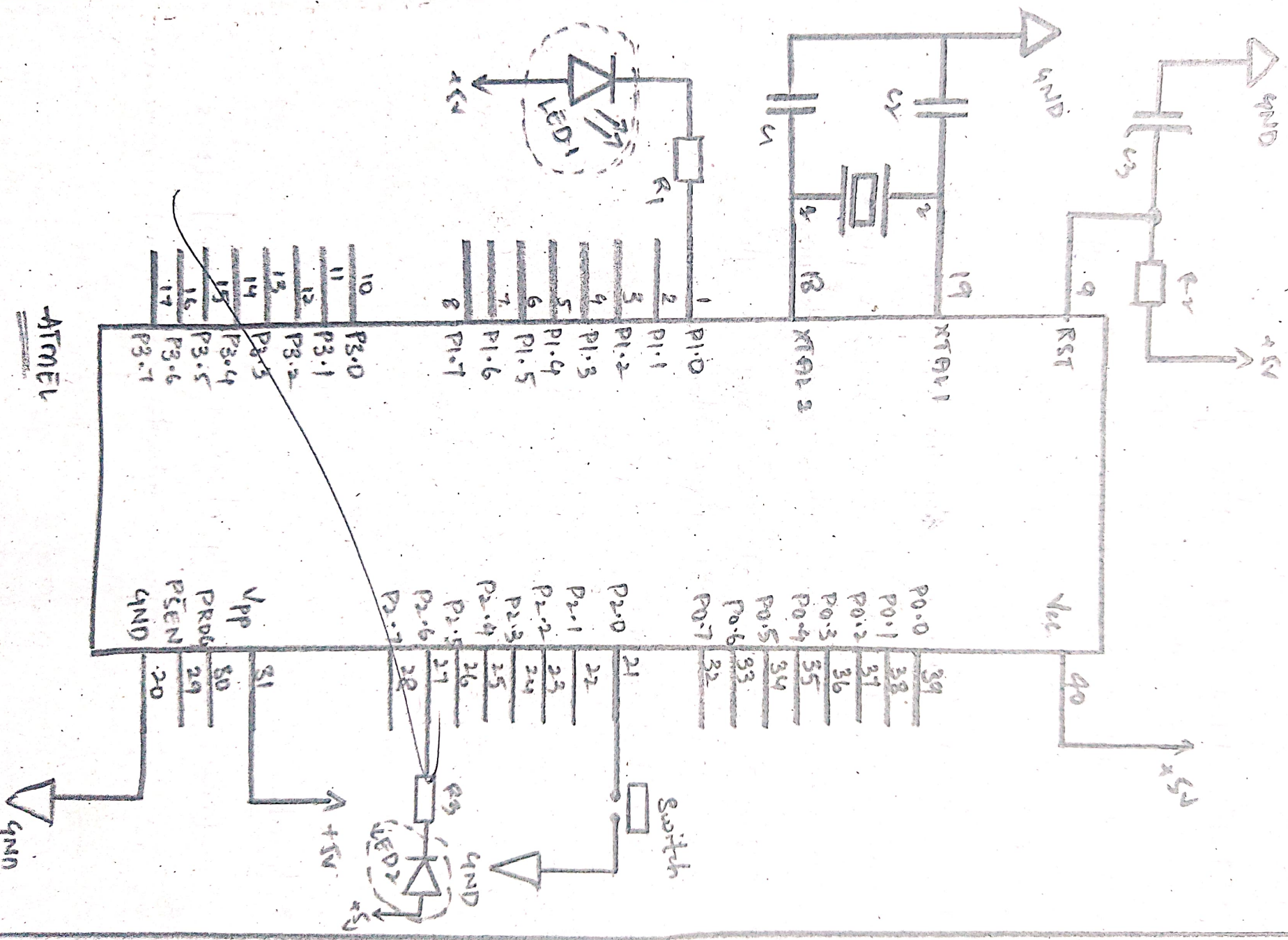
* Simulation Program:

1. SET B. P1.0 // LED at P1.0 glows.

2. SET B P2.6 // LED at P2.6 glows.

3. CLR P1.0 // LED at P1.0 stops glowing

4. CLR P2.6 // LED at P2.6 stops to glow.

* Observation: when we run the program,

i) during line-1 LED at P1.0 starts to glow.

ii) during line-2 LED at P2.6 starts to glow.

iii) during line-3 LED at P1.0 stops to glow.

iv) during line-4 LED at P2.6 stops to glow, as shown in Circuit Diagram.
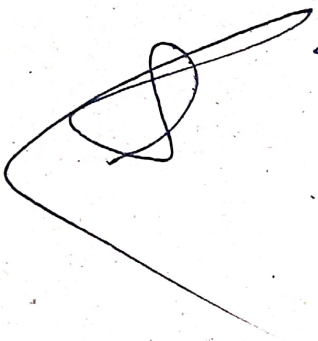
* Result:

Hence, Successfully observed blinking of LED's using ATMEL Micro Controller / 8051 Microprocessor

No. 52710

H.T. No.	2	0	2	4	1	A	0	2	1	6

Name of the Examination _III-I Lab Internal Exam_

Course _Micro Controllers Lab_   Branch _EEE_   Date _7/12/22_

Signature of the Invigilator

START WRITING FROM HERE

Serial Communication - Read Analog Value

Aim:- To observe the Serial Communication by using Arduino Software.

Apparatus:- Arduino Software, Arduino UNO board, Connecting Wires.

Theory:-

Serial Communication is observed in Serial Monitor. After writing appropriate code in the Editor window and running the program. The output is displayed in Serial Monitor. It consists Baudrate of 9600. Arduino board consists of 13 Analog Pins. (2-7) are Switches, (8-13) are LED.
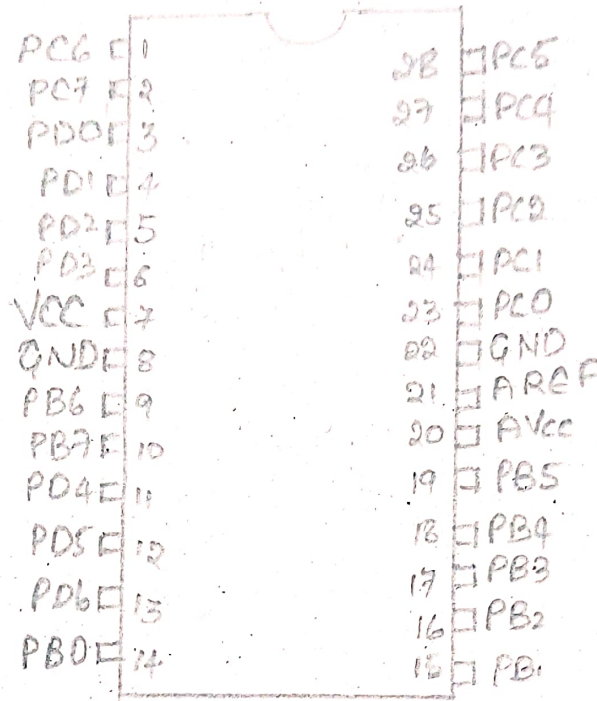
~~~ through the ~~~

Procedure:-

1) Go to the Simulation window in the software
2) Read the Instructions popping on the window.
3) Click on the sample code.
4) Copy the sample code from the window.
5) OR Write ova own assembly language code
6) Select the port according to the code.
7) To find the Errors, debug the program by enabling the debug option.
8) If any errors are found debug the function
9) To run the program, see if there are any errors and run it.
10) Write down the result from Serial Monitor

Simulation Program

```
void setup()
{
Serial.begin(9600);
}
Void loop()
{
Serial.println("Hello World");
}
```

output:- Hello World

Circuit Diagram:


```
PC6 ☐ 1          28 ☐ PC5
PC7 ☐ 2          27 ☐ PC4
PD0 ☐ 3          26 ☐ PC3
PD1 ☐ 4          25 ☐ PC2
PD2 ☐ 5          24 ☐ PC1
PD3 ☐ 6          23 ☐ PC0
VCC ☐ 7          22 ☐ GND
GND ☐ 8          21 ☐ AREF
PB6 ☐ 9          20 ☐ AVcc
PB7 ☐ 10         19 ☐ PB5
PD4 ☐ 11         18 ☐ PB4
PD5 ☐ 12         17 ☐ PB3
PD6 ☐ 13         16 ☐ PB2
PB0 ☐ 14         15 ☐ PB1
```

Arduino Pin Diagram:

Result:-

Hence the Serial Communication - Read analog Value
has been studied by using Arduio Software

Gokaraju Rangaraju Institute of Engineering & Technology
(Autonomous College Affiliated to JNTUH)　　(8 Pages)
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PRACTICAL EXAMINATION ANSWER BOOK INTERNAL

No. 52683

H.T. No.	2	0	2	4	1	A	0	2	5	0

Name of the Examination __IIIrd year 1st Sem Internal lab Examination.__

Course __MC Internal Exam__　　Branch __EEE__　　Date __04/12/22__

Signature of the Invigilator

START WRITING FROM HERE

6. Serial Communication - Read Analog Value

Aim :— To determine the Serial Communication on Read Analog Value.

Apparatus :— Serial Communication

　　　Analog kit

　　　Motherboard kit

　　　Diodes Arduino Uno board

　　　Communicator.

Procedure :

1) Open the software micro processor

2) Open the new page and Select the Arduino Uno board.

3) If not downloaded, download the Arduino Uno board.

4) Write the program in the software of Arduino.

5) Debug the program.

5) ~~Run the~~ Save the program as some extended file.

6) Run the program

7) Connect the Communicator.

8) Switch on the Communicator and start noted down the values.

9) In the Serial Communicator note a table of Analog values.

__Program:__

```
Analog in out Serial t
Count int analog in pin = Po;
Const int analog out pin Py;
int sensor value = 0;
int output value F 0;
void setup() {
  Serial, begin(9800);
}
void loop.'
}
```

Output:

· Sensor = 102} output 2 256 voltage 5.00

Sensor 2 1023: output 2 255 voltage = 5.00

Result: — Hence the Serial Communiction of Read -Analog
values are obtained and noteclowned,

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Direct Internal CO Attainments

Academic Year	2022-23	Department	EEE		Name of the Programme	B.Tech		
Year - Semester	III-I	Course Name :	MPMC Lab		Course Code	GR20A3022	Section	A

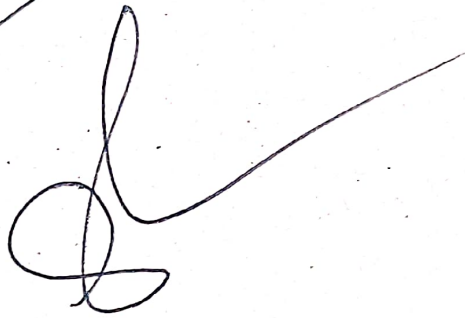| S.No/Roll No.	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q.No 13	Q.No 14	Q.No 15	Viva	Iteration 1	Iteration 2	Marks
Enter CO Number → 1,2,3,4,5,6,7	1,2,3,4,5	1,2,3,4,5	1,2,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5				1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5
Marks →	10	10	10	10	10	10	10	10	10	10	10	10				10	5	5	5
Note : Enter Marks Between Two Green rows. Another Note : Additional Columns if Required should be inserted after column H and appropriately rename the Q. Nos.																			
First / 1				8												10	5	5	5
2						8										9	5	5	4
3			7													10	5	5	5
4	10															10	5	5	5
5							10									10	5	5	5
6									9							9	5	5	4
7		3														10	5	5	5
8					3											10	5	5	5
9										3						8	5	5	3
10											10					10	5	5	5
11									9							10	5	5	5
12												9				10	5	5	5
13				5												7	4	4	3
14		9														10	5	5	5
15	6															9	5	5	4
16			8													9	5	5	4
17					10											10	5	5	5
18							6									10	5	5	5
19				6												10	5	5	5
20		3														9	5	5	4
21						3										10	5	5	5
22								7								9	4	4	5
23									3							8	3	3	5
24												3				8	5	5	3
25										9						9	4	4	5
26						5										8	5	5	3
27					6											9	5	5	4
28				9												10	5	5	5
29		6														9	5	5	4
30	2															6	3	3	3
31																0	0	0	0
32		9														10	5	5	5
33			3													8	4	4	4
34						9										9	5	5	4
35							6									9	5	5	4

Lab Internal Examination — Record (Iteration 1, Iteration 2) — Assessment (Marks)

#	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12				Total	CO-a	CO-b	CO-c
36										9						7	3	3	4
37												9				7	3	3	4
38											9					10	5	5	5
39									9							10	5	5	5
40							9									8	5	5	3
41						6										10	5	5	5
42				8												8	4	4	4
43			4													6	3	3	3
44		8														10	5	5	5
45	3															9	5	5	4
46					8											9	5	5	4
47							7									9	5	5	4
48									4							9	5	5	4
49											3					8	3	3	5
50												6				7	4	4	3
51										7						10	5	5	5
52							4									7	4	4	3
53					10											10	5	5	5
54			7													7	4	4	3
55		8														9	5	5	4
56	8															10	5	5	5
57					10											10	5	5	5
58							8									9	5	5	4
59				6												8	5	5	3
60									8							10	5	5	5
61											10					10	5	5	5
62												8				10	5	5	5
63						8										9	5	5	4
64				7												9	5	5	4
65		9														9	5	5	4

if your class strength is > 60 then *insert rows* _above the green row Last record_ , Similarly _delete the_ _empty rows above green row_ if the class strenght is < 60)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12				Total	CO-a	CO-b	CO-c
Total number of students appeared for the examination (NST)	5	8	4	8	6	5	7	2	6	4	4	5				65	65	65	65
Total number of students attempted the question (NSA)	5	8	4	8	6	5	7	2	6	4	4	5				65	65	65	65
Attempt % (TAP) = (NSA/NST)*100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				100.00	100.00	100.00	100.00
Total number of Students who got more than 60% marks (NSM)	3	6	3	6	5	4	5	2	4	3	3	4				64	64	64	64
Attainment % (TMP) = (NSM/NSA)*100	60.00	75.00	75.00	75.00	83.33	80.00	71.43	100.00	66.67	75.00	75.00	80.00				98.46	98.46	98.46	98.46
Score(S)	3	3	3	3	3	3	3	3	3	3	3	3				3	3	3	3

Note : CO attainment is considered to be zero if the attempt % is less than 30%

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12				Total	CO-a	CO-b	CO-c
CO Validation	1,2,3,4,5	1,2,3,4,5	1,2,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5				1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5
Course Outcome	O2,CO3,CO	O2,CO3,CO	O1,CO2,CO	O2,CO3,CO4	O2,CO3,CO	O2,CO3,CO	O2,CO3,CO	O2,CO3,CO	O2,CO3,CO	O2,CO3,CO	O2,CO3,CO	O2,CO3,CO4				O1,CO2,CO3,CO4,CO	CO1,CO2, CO3,CO4, CO5	CO1,CO2, CO3,CO4, CO5	CO1,CO2,CO3,C O4,CO5
Marks (Y)	10	10	10	10	10	10	10	10	10	10	10	10				10	5	5	5
No. of COs Shared (Z)	5	5	3	5	5	5	5	5	5	5	5	5				5	5	5	5

Y/Z	2	2	3.333333	2	2	2	2	2	2	2	2	2				2		1	1	1
S*Y/Z	6	6	10	6	6	6	6	6	6	6	6	6				6		3	3	3
CO1	1	1	1	1	1	1	1	1	1	1	1	1				1		1	1	1
CO2	1	1	1	1	1	1	1	1	1	1	1	1				1		1	1	1
CO3	1	1	0	1	1	1	1	1	1	1	1	1				1		1	1	1
CO4	1	1	0	1	1	1	1	1	1	1	1	1				1		1	1	1
CO5	1	1	1	1	1	1	1	1	1	1	1	1				1		1	1	1
CO6	0	0	0	0	0	0	0	0	0	0	0	0				0		0	0	0
CO7	0	0	0	0	0	0	0	0	0	0	0	0				0		0	0	0

	CO1	CO2	CO3	CO4	CO5	CO6	CO7
Weighted Average for Attainment relevance (Internal CODn)	3.00	3.00	3.00	3.00	3.00		

!! Caution !! For CO Values < 2.1 should be justified with Remidial Action Report.

Gokaraju Rangaraju Institute of Engineering and Technology

(Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090

Indirect CO Attainments

Academic Year	2022-23		Department		EEE		Name of the Programme	B.Tech		
Year - Semester	III-I		Course Name :		MPMC Lab		Course Code	GR20A3022	Section	A

Course Outcomes survey on Scale 1 (Low) to 5 (High)

Course Outcome→	1. Familiarize with the assembly level programming using 8086.	2. Judge the difference between Assembly language and Embedded C Programming	3. Design circuits for interfacing different modules to microcontrollers.	4. Experiment 8051 with different types of communicating devices.	5. Execute various programs which can resemble to the real time applications.		
CO Number 1,2,3,4,5,6,7	1	2	3	4	5		
Marks	5	5	5	5	5		
S.No/Roll No.	Note : Enter Marks Between Two Green rows.						
First record/1	5	5	5	5	4		
2	4	4	5	5	5		
3	4	4	3	5	4		
4	4	4	4	3	4		
5	5	5	3	5	5		
6	5	4	5	5	5		
7	3	3	5	5	4		
8	5	5	5	4	5		
9	5	5	5	4	5		
10	4	5	5	5	5		
11	5	4	3	5	5		
12	3	5	4	4	5		
13	5	5	5	4	5		
14	5	5	5	5	4		
15	4	5	4	4	5		
16	5	5	5	5	5		
17	5	5	5	5	5		
18	5	5	5	4	5		
19	5	4	5	4	5		
20	4	5	5	5	5		
21	5	5	5	4	5		
22	5	4	5	5	5		
23	5	5	4	5	4		
24	5	4	5	5	5		
25	5	5	5	5	5		
26	5	5	5	5	4		
27	5	4	4	4	4		
28	4	5	4	5	5		
29	4	5	5	5	5		
30	5	4	5	5	4		
31	5	5	5	5	5		
32	4	4	4	5	5		
33	4	5	5	4	5		
34	5	4	5	4	4		
35	5	5	5	5	5		
36	4	5	4	5	5		
37	4	5	5	5	5		
38	5	5	5	4	5		
39	5	5	5	5	5		
40	5	5	5	4	5		
41	5	5	4	5	4		
42	5	5	5	5	5		
43	4	5	5	5	5		
44	5	3	4	4	5		
45	4	4	5	5	5		
46	4	5	5	5	4		
47	5	5	5	5	5		
48	4	4	5	5	5		
49	4	5	5	5	5		
50	4	5	4	5	4		
51	4	5	5	5	5		
52	5	5	4	3	5		
53	4	4	4	5	4		
54	5	4	3	4	5		
55	5	5	5	5	4		
56	5	5	5	5	4		
57	5	5	5	5	4		
58	5	5	5	5	4		
59	5	5	5	5	4		
60	4	5	5	5	5		
61	5	5	4	3	5		
62	4	4	4	5	4		
63	5	4	3	4	5		
64	5	5	5	5	4		
Last Record/65	5	5	5	5	4		
if your class strength is > 60 then insert rows above the green row Last record , Similarly delete the empty rows above green row if the class strenght is < 60)							
Total number of students appeared for the examination (NST)	65	65	65	65	65		
Total number of students attempted the question (NSA)	65	65	65	65	65		
Attempt % (TAP) = (NSA/NST)*100	100.00	100.00	100.00	100.00	100.00		
Total number of Students who got more than 60% marks (NSM)	65	65	65	65	65		
Attainment % (TMP) = (NSM/NSA)*100	100.00	100.00	100.00	100.00	100.00		
Score(S)	3	3	3	3	3		

CO attainment is considered zero if the attempt % is less than 30%

	CO1	CO2	CO3	CO4	CO5		
Indirect CO (COIn)	3	3	3	3	3		

Gokaraju Rangaraju Institute of Engineering and Technology
(Autonomous)
Bachupally, Kukatpally, Hyderabad – 500 090
Direct External CO Attainment

Academic Year	2022-23	Department		EEE			Name of the Programme		B.Tech			
Year - Semester	III-I	Course Name :		MPMC Lab			Course Code		GR20A3022		Section	A

	Part A												Part B			
	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q.No 13	Q.No 14	Q.No 15	Viva
Enter CO Number → 1,2,3,4,5,6,7	1,2,3,4,5	1,2,3,4,5	1,2,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5				1,2,3,4,5
Marks →	50	50	50	50	50	50	50	50	50	50	50	50				20

Note : Enter Marks Between Two Green rows. Another Note : Additional Columns if Required should be inserted after column H and appropriately rename the Q. Nos.

S.No/Roll No.	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q.No 13	Q.No 14	Q.No 15	Viva
First record / 1			22													20
2					22											18
3		15														20
4	42															20
5						43										20
6							22									18
7								22								20
8									25							20
9										23						16
10				30												20
11		33														20
12					32											20
13							21									14
14								22								20
15			34													18
16	30															18
17				28												20
18						24										20
19							25									20
20				24												18
21			14													20
22						29										18
23								38								16
24		16														16
25				36												18
26	31															16
27					26											18
28							29									20
29								29								18
30									20							12
31																AB
32										44						20
33											17					16
34											34					18
35									24							18
36								29								14
37						34										14
38				33												20
39		44														20
40	30															16
41					34											20
42							36									16
43									32							12
44											33					20
45							26									18
46							33									18
47						46										18
48				28												18
49			24													16
50		24														14
51				33												20
52						28										14
53							47									20
54	18															14
55		28														18
56			44													20
57				38												20
58						33										18
59							35									16
60							44									20
61								37								20
62									37							20
63									32							18
64											15					18
Last record/65												34				18

if your class strength is > 60 then insert rows above the green row Last record , Similarly delete the empty rows above green row if the class strenght is < 60)

	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q.No 13	Q.No 14	Q.No 15	Viva
Total number of students appeared for the examination (NST)	5	6	5	8	7	5	6	5	5	5	3	4				65
Total number of students attempted the question (NSA)	5	6	5	8	7	5	6	5	5	5	3	4				64
Attempt % (TAP) = (NSA/NST)*100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				98.46
Total number of Students who got more than 60% marks (NSM)	4	2	2	5	4	3	4	1	2	2	1	3				64
Attainment % (TMP) = (NSM/NSA)*100	80.00	33.33	40.00	62.50	57.14	60.00	66.67	20.00	40.00	40.00	33.33	75.00				100.00
Score(S)	3	1	1	3	2	3	3	0	1	1	1	3				3

CO attainment is considered zero if the attempt % is less than 30%

CO Validation	1,2,3,4,5	1,2,3,4,5	1,2,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5				1,2,3,4,5
Course Outcome	CO2,CO3,CO	CO2,CO3,CO	CO1,CO2,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO	CO2,CO3,CO				CO1,CO2,CO3,CO4,CO5
Marks (Y)	50	50	50	50	50	50	50	50	50	50	50	50				20
No. of COs Shared (Z)	5	5	3	5	5	5	5	5	5	5	5	5				5
Y/Z	10	10	16.666667	10	10	10	10	10	10	10	10	10				4
S*Y/Z	30	10	16.666667	30	20	30	30	0	10	10	10	30				12

	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q.No 13	Q.No 14	Q.No 15	Viva
CO1	1	1	1	1	1	1	1	1	1	1	1	1				1
CO2	1	1	1	1	1	1	1	1	1	1	1	1				1
CO3	1	1	0	1	1	1	1	1	1	1	1	1				1
CO4	1	1	0	1	1	1	1	1	1	1	1	1				1
CO5	1	1	1	1	1	1	1	1	1	1	1	1				1
CO6	0	0	0	0	0	0	0	0	0	0	0	0				0
CO7	0	0	0	0	0	0	0	0	0	0	0	0				0

Weighted Average for Attainment relevance (Internal COn)	CO1	CO2	CO3	CO4	CO5	CO6	CO7
	1.83	1.83	1.95	1.95	1.83		

!! Caution !! For CO Values < 2.1 should be justified with Remidial Action Report.

Gokaraju Rangaraju Institute of Engineering and Technology
(Autonomous)
Bachupally, Kukatpally, Hyderabad – 500 090
Summary Sheet CO Attainments

Academic Year:	2022-23		Name of the Program:	B.Tech
Course/Subject:	MPMC Lab		Course Code:	GR20A3022
Department:	EEE		Year - Semester :	III-I
Section	A			

Attainment/CO	CO1	CO2	CO3	CO4	CO5	CO6	CO7
Attainment for Direct Internal CO (Mid I & II, Assignments, Tutorials, Assessments, etc.)	3.00	3.00	3.00	3.00	3.00		
Attainment for Direct External CO (End Semester Exam)	1.83	1.83	1.95	1.95	1.83		
Direct CO (0.3*Internal + 0.7*External)	2.18	2.18	2.26	2.26	2.18		
Indirect CO	3.00	3.00	3.00	3.00	3.00		
Final CO (COFn) = (0.9 x Direct CO + 0.1 x Indirect CO)	**2.26**	**2.26**	**2.34**	**2.34**	**2.26**		

CO	Course Outcome	Remedial Action for COs Less than 70% (2.10)
CO1	1. Familiarize with the assembly level programming using 8086.	
CO2	2. Judge the difference between Assembly language and Embedded C Programming	
CO3	3. Design circuits for interfacing different modules to microcontrollers.	
CO4	4. Experiment 8051 with different types of communicating devices.	
CO5	5. Execute various programs which can resemble to the real time applications.	
CO6		
CO7		

ID No.	Name of the Faculty	Department	Signature
931	Dr P Srividya Devi	EEE	
882	M N Sandhya Rani	EEE	

HOD   **DAA**

Copy to: IQAC

Gokaraju Rangaraju Institute of Engineering and Technology

(Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090

Direct Internal CO Attainments

Academic Year	2022-23		Department	EEE		Name of the Programme	B.Tech
Year - Semester	III-I		Course Name :	MPMC Lab		Course Code	GR20A3022

P-Outcomes / C-Outcomes	A	B	C	D	E	F	G	H	I	J	K	L	PSO1	PSO2
1	H	M	H		M		M	H	M	M	H	H	M	H
2	H	H	H		M		M	H	M			H	H	M	H
3	H	H	H	H	M		M	H		M	M	H	M	H
4	H	H	H			M	M				H	H	M	H
5	H	H	H	M		M		M			H	H	M	H
6														
7														

Convert above mappings to scale 1-3

P-Outcomes / C-Outcomes	A	B	C	D	E	F	G	H	I	J	K	L	PSO1	PSO2
CO1	3	2	3		2		2	3	2	2	3	3	2	3
CO2	3	3	3		2		2	3	2		3	3	2	3
CO3	3	3	3	3	2		2	3		2	2	3	2	3
CO4	3	3	3			2	2				3	3	2	3
CO5	3	3	3	2		2		2			3	3	2	3
CO6														
CO7														
Expected Attainment	3.00	2.80	3.00	2.50	2.00	2.00	2.00	2.75	2.00	2.00	2.80	3.00	2.00	3.00

	CO1	CO2	CO3	CO4	CO5	CO6	CO7
Final Cos CoF	2.26	2.26	2.34	2.34	2.26		

	Attained PO A	Attained PO B	Attained PO C	Attained PO D	Attained PO E	Attained PO F	Attained PO G	Attained PO H	Attained PO I	Attained PO J	Attained PO K	Attained PO L	PSO1	PSO2
CO1	2.26	1.51	2.26		1.51		1.51	2.26	1.51	1.51	2.26	2.26	1.51	2.26
CO2	2.26	2.26	2.26		1.51		1.51	2.26	1.51		2.26	2.26	1.51	2.26

Enter H,M, L values of CO-PO Mapping Matrix in blue shaded rows 12 - 18 for seven CO s automatically PO Attainments are Calculated

←

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO3	2.34	2.34	2.34	2.34	1.56		1.56	2.34		1.56	1.56	2.34	1.51	2.26
CO4	2.34	2.34	2.34			1.56	1.56				2.34	2.34	1.51	2.26
CO5	2.26	2.26	2.26	1.51		1.51		1.51			2.26	2.26	1.51	2.26
CO6														
CO7														
Attained	2.29	2.14	2.29	1.92	1.52	1.53	1.53	2.09	1.51	1.53	2.14	2.29	1.51	2.26

	A	B	C	D	E	F	G	H	I	J	K	L	PSO1	PSO2
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12		
Expected	3.00	2.80	3.00	2.50	2.00	2.00	2.00	2.75	2.00	2.00	2.80	3.00	2.00	3.00
Attained	2.29	2.14	2.29	1.92	1.52	1.53	1.53	2.09	1.51	1.53	2.14	2.29	1.51	2.26
Percentage %	76.37	76.44	76.37	76.88	76.20	76.63	76.63	76.05	75.36	76.63	76.26	76.37	75.36	75.36

Note : PO is Satisfied if attained PO > 70, U indicates PO Unsatisfied

Faculty Co-Ordinator   **HOD**

GOKARAJU RANGARAJU INSTITUTE OF ENGNEERING AND TECHNOLOGGY

Approved By AICTE, Affiliated to JNTUH, Autonomous Under UGC

Nizampet Road, Bachupally, Kukatpally, Hyderabad - 500090, Telangana, India

Tel: 7207344440, Email:info@griet.ac.in, www.griet.ac.in

STUDENT FEEDBACK

Faculty	:	PALAKALURI. SRIVIDYA DEVI
Subject	:	Microprocessors And Microcontrollers Lab (B.Tech, III/IV B.Tech I Semester, EEE Sec-A)
Academic Year	:	2022 - 2023
Phase	:	Phase-3

Sl.No	Question	Excellent	Good	Average	Poor	Q.Wise Total	Q.Wise %
1	Preparation and delivery of the lessons by the teacher	18	34	4	2	184	79.00
2	Subject Knowledge	17	34	5	2	182	78.00
3	Clarity in Communication	20	32	3	3	185	80.00
4	Using Modern Teaching Aids of ICT	17	37	1	3	184	79.00
5	Creating interest on the course in the class	17	35	4	2	183	79.00
6	Maintaining discipline in the class	14	39	3	2	181	78.00
7	Encouraging and clearing doubts in the class	15	35	6	2	179	77.00
8	Punctuality	14	38	4	2	180	78.00
9	Accessibility of the teacher	13	40	2	3	179	77.00
10	Overall grading of the teacher	17	36	3	2	184	79.00
	Total	162	360	35	23		
	Total Points	**648**	**1080**	**70**	**23**	**1821**	**78.00**

No.Of Students Posted	**58**
Total Percentage Awarded to The Faculty	**78.00**
Grade of Faculty	**Good**

*Excellent (4) : >=90 %   *Good (3) : >=75 & <90%

*Average (2) :   >=60 & <75 % *Poor (1) : Below 60 %

Formula: Total Obtained Points/(Max Points(i.Excellent-4) * No.Of.Students * NoOfQuestions)

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Tel: 7207344440, Email:info@griet.ac.in, www.griet.ac.in

STUDENT FEEDBACK

Faculty	: MULAGAPATI. NAGA SANDHYA RANI
Subject	: Microprocessors And Microcontrollers Lab (B.Tech, III/IV B.Tech I Semester, EEE Sec-A)
Academic Year	: 2022 - 2023
Phase	: Phase-3

Sl.No	Question	Excellent	Good	Average	Poor	Q.Wise Total	Q.Wise %
1	Preparation and delivery of the lessons by the teacher	17	36	3	2	184	79.00
2	Subject Knowledge	16	38	2	2	184	79.00
3	Clarity in Communication	15	37	4	2	181	78.00
4	Using Modern Teaching Aids of ICT	18	33	4	3	182	78.00
5	Creating interest on the course in the class	16	34	6	2	180	78.00
6	Maintaining discipline in the class	17	36	3	2	184	79.00
7	Encouraging and clearing doubts in the class	18	31	6	3	180	78.00
8	Punctuality	15	33	8	2	177	76.00
9	Accessibility of the teacher	15	37	2	4	179	77.00
10	Overall grading of the teacher	16	36	3	3	181	78.00
	Total	163	351	41	25		
	Total Points	**652**	**1053**	**82**	**25**	**1812**	**78.00**

No.Of Students Posted	**58**
Total Percentage Awarded to The Faculty	**78.00**
Grade of Faculty	**Good**

*Excellent (4) : >=90 %   *Good (3) : >=75 & <90%
*Average (2) :   >=60 & <75 % *Poor (1) : Below 60 %

Formula: Total Obtained Points/(Max Points(i.Excellent-4) * No.Of.Students * NoOfQuestions)

Gokaraju Rangaraju Institute of Engineering & Technology

III B.Tech I Sem (EEE) Result Analysis

Academic Year: 2022-23   Total No. of Students Registered: 65

Course	Total No. of Students appeared	Total No. of Students Passed	No. of Students Failed	Count of Students with Grade Point					
				GP (10)	GP (9)	GP (8)	GP (7)	GP (6)	GP (5)
PSA	65	50	15	00	00	12	10	14	14
PE	65	50	15	00	02	06	12	19	11
MPMC	65	47	18	00	01	09	08	12	17
EHV	65	60	05	00	05	14	20	15	06
PS-I Lab	65	63	02	10	19	07	03	13	11
PE Lab	65	64	01	22	11	15	10	06	00
MPMC Lab	**65**	**64**	**01**	**07**	**11**	**21**	**16**	**08**	**01**
Cloud Computing (MOOCs)									

Arrears Position – III year / I Semester

No.of students	All Pass	One Arrear	Two Arrears	Three Arrears	More than three arrears	Over all % of pass
65	38	11	09	03	04	58.46 %

Performance overall Class Three Toppers

ROLL NO.	NAME	SGPA
20241A0235	RAMINENI VYSHNAVI	8.53
21245A0201 21245A0206	JAKINAPALLI CHANDHANA VEMULA SATYANARAYANA	8.43
20241A0248 20241A0257 21245A0205	UMMIDISETTY NIHARIKA SUSANI NEHA SANATHANA JAHNAVI	8.28

Class coordinator   **HOD,EEE**

III B.Tech - I Sem (EEE)

SECTION	Courses	PSA	PE	MPMC	EHV	PS Lab	PE Lab	**MPMC Lab**	Cloud Computing (moocs)
	Course codes	GR20A3012	GR20A3012	GR20A3012	GR20A3012	GR20A3012	GR20A3012	**GR20A3012**	GR20A3012
A	TOTAL	65	65	65	65	65	65	**65**	
	PASS	50	50	47	60	63	64	**64**	
	PASS(%)	76.92%	76.92%	72.30%	92.30%	96.92%	98.46%	**98.46%**	
	FACULTY NAME	Dr J Sridevi	Dr Pakkiraiah B	Dr D Raveendra	Dr D G Padhan	Dr J Sridevi / V Usha Rani/ U Vijaya Lakshmi	Dr Pakkiraiah B/ G Sandhya Rani	**Dr P Srividya Devi/ M N Sandhya Rani**	P Ravikanth
	FACULTY ID	516	1593	1604	1283	516/1045/692	1593/888	**931/882**	1178

Dr Phaneendra Babu B

Class coordinator   **HOD,EEE**

Stakeholders Feedback for the

Microprocessors and Microcontrollers Lab

Action Taken Report

According to the student's feedback: Less rating for the point: Rate your Teachers Guidance in other activities like NPTEL, MOOCs etc.

For these students are guided to experiments in Virtual labs of course **Microprocessors and Microcontrollers Lab by IIT Bombay**

Students are instructed to do in Virtual MOOCs platforms: Supporting documents attached.

ADC and DAC.

Aim : Interfacing of 8051 microcontroller with ADC and DAC.

Apparatus : Virtual labs.
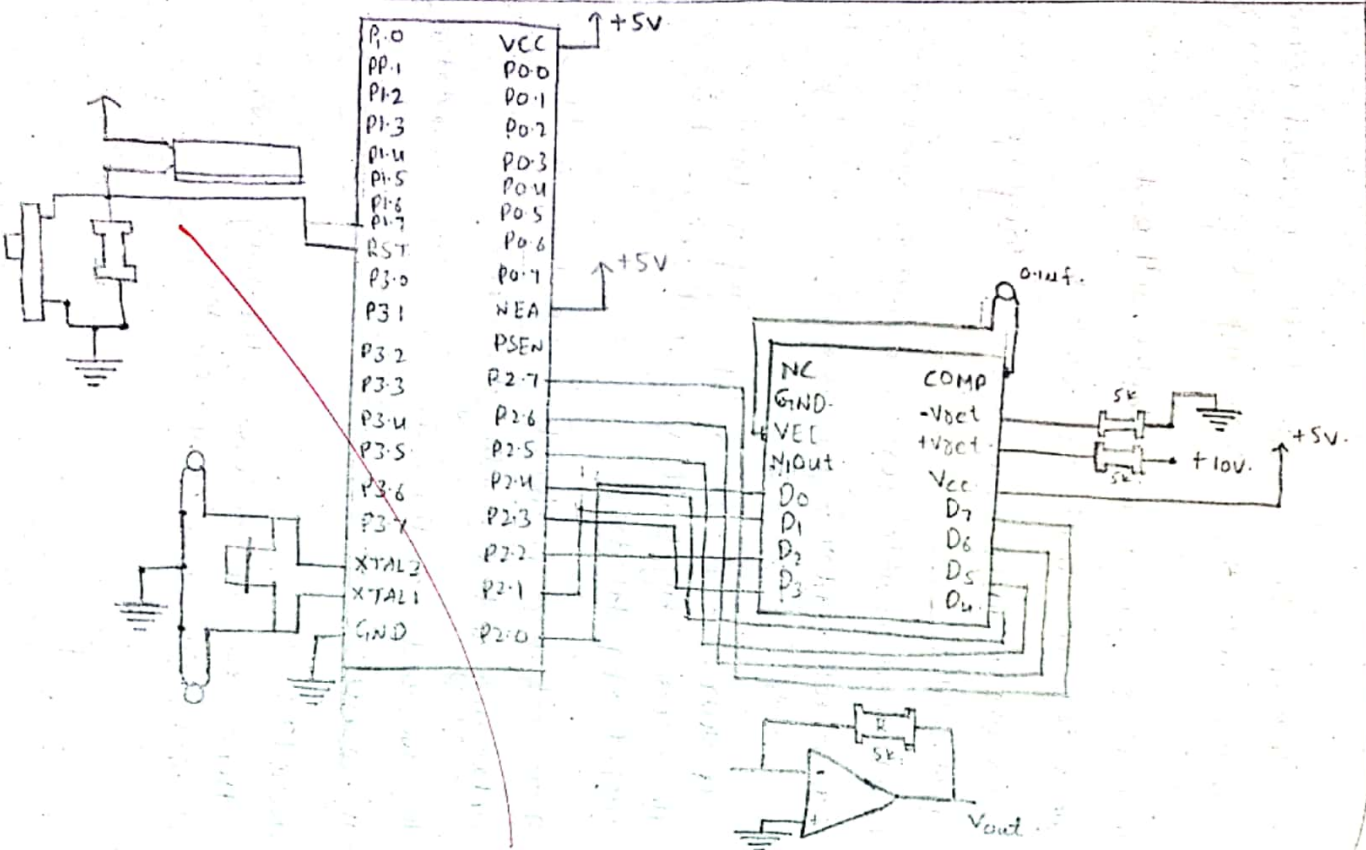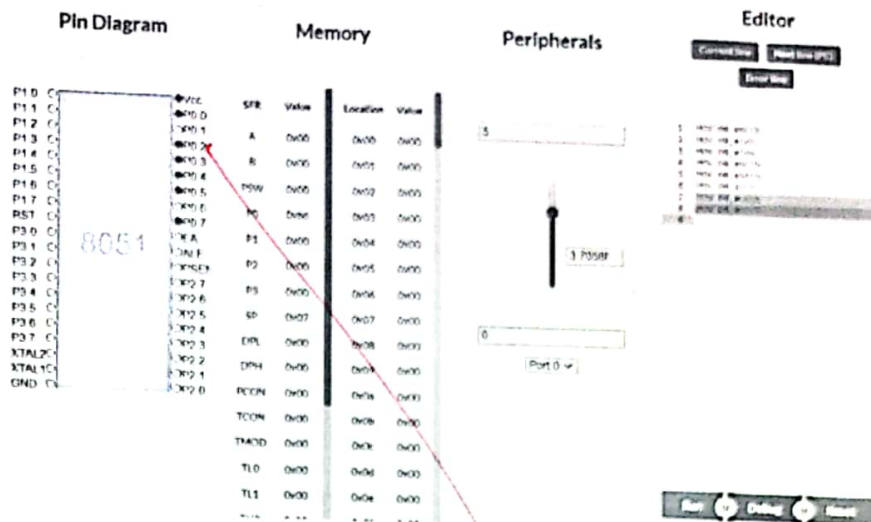
Program :

DAC Sample Program :

```
MOV  P1, #OFFh
MOV  P0, #10h
MOV  P0, #20h
MOV  P0, #OFFh
MOV  P0, #OAFh
MOV  P0, #08h
MOV  P0, #08Dh
MOV  P0, #OFFh
```

Procedure :

1. Go to Simulator section to perform an experiment.

2. Read all the instructions popping up from simulator window carefully.

3. Click on shed samples button provided below; understand the interfacing diagram and sample code.

4. Copy program from samples and paste in text editor in simulator window.

Pin Diagram

```
P1.0      Vcc
P1.1      P0.0
P1.2      P0.1
P1.3      P0.2
P1.4      P0.3
P1.5      P0.4
P1.6      P0.5
P1.7      P0.6
RST       P0.7
P3.0      EA
P3.1      ALE     8051
P3.2      PSEN
P3.3      P2.7
P3.4      P2.6
P3.5      P2.5
P3.6      P2.4
P3.7      P2.3
XTAL2     P2.2
XTAL1     P2.1
GND       P2.0
```

Memory

SFR	Value	Location	Value
A	0x00	0x00	0x00
B	0x00	0x01	0x00
PSW	0x00	0x02	0x00
PC	0x00	0x03	0x00
P1	0x00	0x04	0x00
P2	0x00	0x05	0x00
P3	0x00	0x06	0x00
SP	0x00	0x07	0x00
DPL	0x00	0x08	0x00
DPH	0x00	0x09	0x00
PCON	0x00	0x0a	0x00
TCON	0x00	0x0b	0x00
TMOD	0x00	0x0c	0x00
TL0	0x00	0x0d	0x00
TL1	0x00	0x0e	0x00

Peripherals

```
3
[slider]
3 Poser
0
[Port 0 ▼]
```

Editor

```
Current line   Next line (PC)
               Error line
```

```
Run   Debug   Reset
```

5. on write your own assembly language code in
   Text editor

6. Select appropriate port according to your code

7. To check syntax errors on each line, debug option
   is provided

8. If your code output is depending on time sequence
   please use debug function. It will show changes
   in output step by step

9. To get the final output, run the simulators after
   debugging and assembling the code with no error

10. solve Test questions given below the simulators
    section.

11. submit the answers and PDF will be generated

Result:

Hence we can observe the interfacing of 8051
Microcontroller with ADC and DAC

DC MOTOR CONTROL

Aim: To control the speed of DC motor using arduino and rotation also.

Apparatus:

Arduino UNO
DC motor
Breadboard
Transistor
Resistor
PN diode
Arduino IDE

Program code:

```
void setup ()
{
  pinMode (5, OUTPUT);
  pinMode (6, OUTPUT);
  pinMode (8, OUTPUT);
  pinMode (9, OUTPUT);
  pinMode (10, OUTPUT);
  pinMode (11, OUTPUT);
  digitalWrite (5, HIGH);
  digitalWrite (6, HIGH);
}

void loop ()
{
// Clockwise rotation
  digitalWrite (8, HIGH);
  digitalWrite (9, LOW);
```

```
  delay (3000);

  // Stop
    digital Write ( 8, LOW);
    digital Write ( 9, LOW);
    delay ( 3000);

  // Anti-clockwise rotation
    digital Write ( 8, LOW);
    digital Write ( 9, HIGH);
    delay (3000);

  // Stop
    digital Write ( 8, LOW);
    digital Write ( 9, LOW);
    delay (1000);
}
```
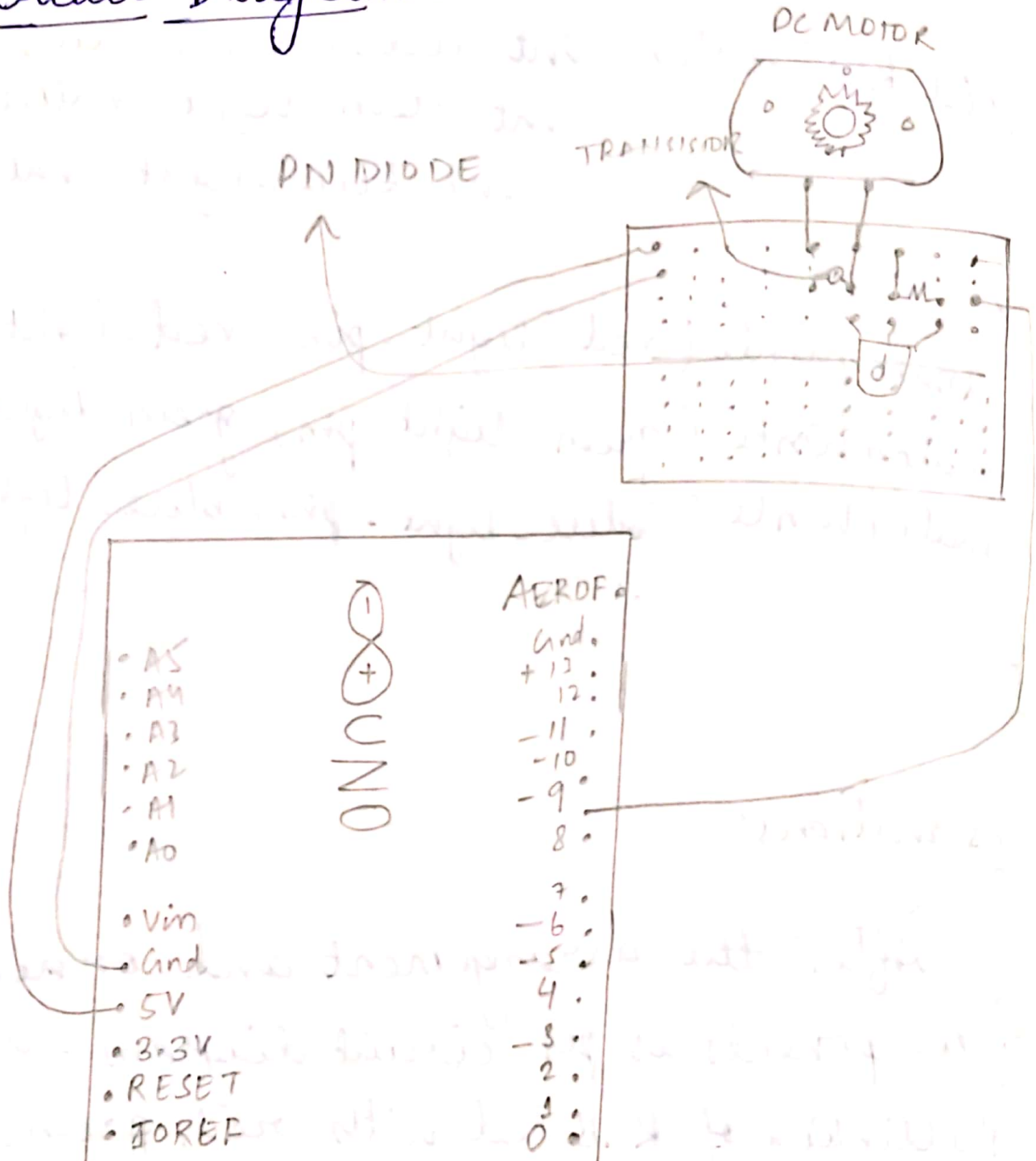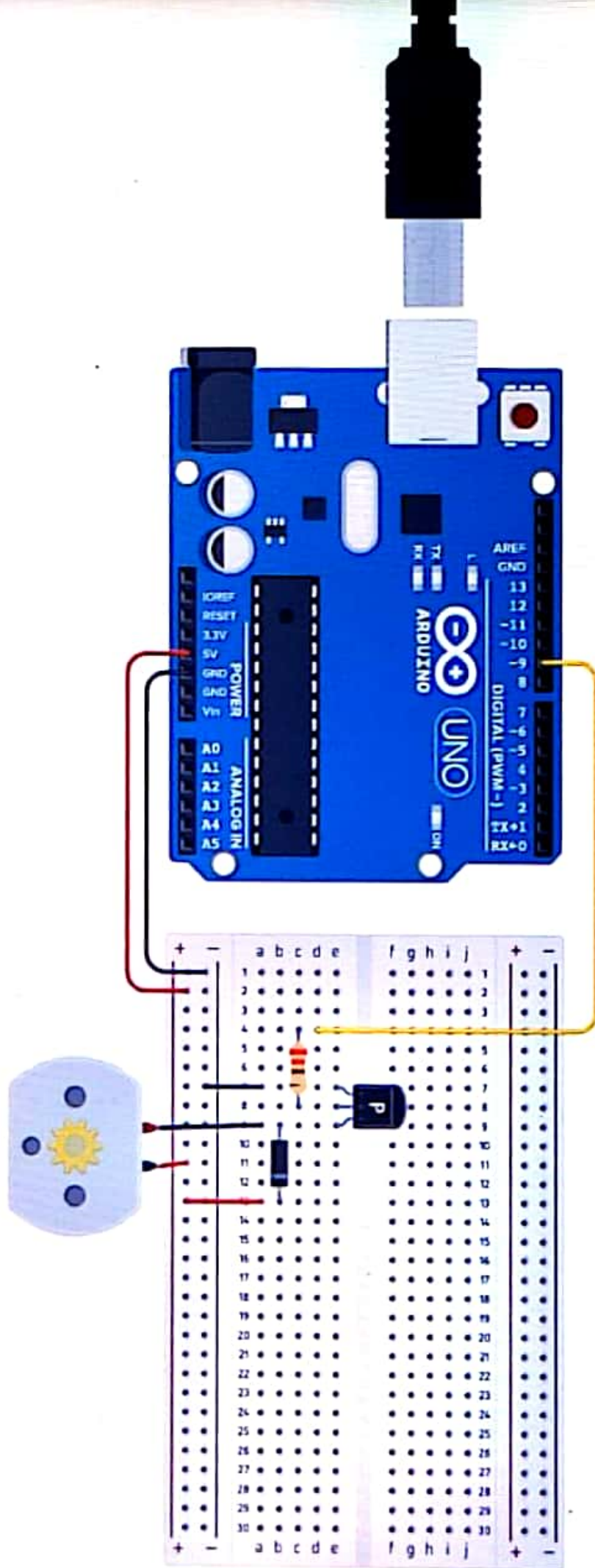
Observation :

When the above code is executed in
arduino IDE, the DC motor rotates in
clockwise, anti-clockwise and the
speed of dc motor is controlled
according to the given speed.

Result :

The dc motor is controlled
using arduino respectively.

Circuit Diagram :

PN DIODE

TRANSISTOR

DC MOTOR

AEROF

UNO

- A5
- A4
- A3
- A2
- A1
- A0

- Vin
- Gnd
- 5V
- 3.3V
- RESET
- IOREF

Gnd.
+ 13 .
12 .
- 11 .
- 10
- 9 .
8 .
7 .
- 6 .
- 5 .
4 .
- 3 .
2 .
1 .
0 .

According to the student's feedback Less overall rating for Lab

Inspite of the VLabs , MCQs are conducted for the students to improve their performance in lab timings

Signatures of Faculty members   HoD