NAME OF THE FACULTY : RAVINDER KUMAR

**DISCIPLINE** : ECE **SEMESTER** : 5 <sup>th</sup>

**SUBJECT** : Microcontroller

**LESSON PLAN DURATION** : - 15 weeks (from September to December 2020)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-04, PRACTIACL-03 PER GROUP

WEEK	THEORY			PRACTICAL			
S.N.	Lecture	TOPIC	Practical		Experiment		
	/ Hrs	(Including Assignment/Test)	/	Irs	Experiment		
1 <sup>st</sup>	1	Introduction to Microcontroller series (MCS)	Group-1	2	Familiarization with Micro- controller Kit and its different sections		
	2	Architecture of 8051Microcontroller	9	3			
	3	Architecture of 8051Microcontroller	Group-2	2	Familiarization with Micro- controller Kit and its different sections		
	4	Pin details		3			
	5	I/O Port structure  Memory Organization	Group-2 Group-1	1	Familiarization with Assembly Language Programming (PC Based)  Familiarization with Assembly Language Programming (PC Based)		
				2			
2 <sup>nd</sup>	6			3			
	7	Memory Organization		2			
	8	Special Function Registers (SFRs)	Gro	3			
3 <sup>rd</sup>	9	Special Function Registers (SFRs)	Group-	2	Programming to interface switches and LEDs		
	10	External Memory		3			
	11	Instruction Set, Introduction	Group-2	2	Programming to interface switches and LEDs		
	12	Instruction Set of 8051		3			
4th	13	Instruction Set of 8051	Group -1	2	Programming and interface of Seven Segment and LCD.		
	14	Addressing Modes,		3			
	15	Addressing Modes,	Group-2	2	Programming and interface of Seven Segment and LCD.		
	16	Types of Instructions	Gre	3			
5 <sup>th</sup>	17 18	Types of Instructions Timer operation	<u></u>	1	Programming and interfacing of Graphical LCD		
			Group-1	3			
			-	1			
		Assignment-1	Group-2	2	Programming and interfacing of Graphical LCD		
			3rot	3			
	20	Sessional Test-1	٥				

WEEK	THEORY			PRACTICAL		
S.N.	Lecture / Hrs	TOPIC (Including Assignment/Test)		tical Irs	Experiment	
6 <sup>th</sup>	21	Serial Port operation	Group-1	2	Programming to interface Hex 4x4 matrix Keypad	
	22	Serial Port operation	9	3		
	23	Interrupts	Group-2	2	Programming to interface Hex 4x4 matrix Keypad	
	24	Interrupts		3		
	25	Introduction- Assembly/C programming for Micro controller	Group-1	2	Programming for A/D converter, result on LCD.  Programming for A/D converter, result on LCD.	
7 <sup>th</sup>	26	Assembler directives		3		
	27	Assembler directives	Group-2	2		
	28	Assembler operation	Ğ	3		
	29	Assembler operation	Group- 1	2	Programming for D/A converter, result on LCD.	
	30	Compiler operations	5	3	Converter, result on LCD.	
8 <sup>th</sup>	31	Compiler operations	Group-2	2	Programming for D/A converter, result on LCD.	
	32	Assembler operation & Compiler operations recap		3		
	33	De bugger	Group-2 Group-1	2	Programming for serial data transmission from PC to Kit or Vice versa.  Programming for serial data transmission from PC to Kit or Vice versa.	
9 <sup>th</sup>	34	De bugger		3		
	35	Recap- Assembly/C programming for Micro controller		2		
	36	Design and Interface		3		
	37	Design and Interface	Group- 1	1	Programming and interfacing of RELAY and Buzzer  Programming and interfacing of RELAY and Buzzer	
10 <sup>th</sup>	38	Assignment-2		3		
	39	Sessional Test-2	Group-2	2		
	40	Keypad interface	Grc	3		
	41	Keypad interface	Group- 1	1	Practice and Revision	
11 <sup>th</sup>	42	Keypad interface		3	Practice and Revision	
	43	7- segment interface	Group-2	2		
	44	7- segment interface	Ğ	3		

Lecture / Hrs	WEEK	THEORY			PRACTICAL		
LCD, A/D, D/A and RTC interface with programming.   1   2   2     45     LCD, A/D, D/A and RTC interface with programming.   1   2     2     2     46     47     LCD, A/D, D/A and RTC interface with programming.   1   2   2     2     47     LCD, A/D, D/A and RTC interface with programming.   1   2   2     2     48     LCD, A/D, D/A and RTC interface with programming.   3   48     Recap- Design and Interface   1   2   2     Practice and Revision   3   3     1   3     3     3     3     3     3     3     3     3     3     3     3     3     3		Lecture	TOPIC	Prac	ctical	Evneriment	
45 programming.  LCD, A/D, D/A and RTC interface with programming.  3 Practice and Revision  3 Practice and Revision  3 Practice and Revision  3 Practice and Revision  1 1 2 Practice and Revision  3 Practice and Revision  5 Introduction of PIC Micro controllers  5 Introduction of PIC Micro controllers  5 Introduction of PIC Micro controllers  5 Revision  5 Revision  1 1 2 Practice and Revision  7 1 2 2 Practice and Revision  8 1 2 2 Practice and Revision  9 1 2 2 Practice and Revision  1 2 3 Practice and Revision  1 3 Practice and Revision  1 4 5 Practice and Revision  1 4 5 Practice and Revision		/ Hrs		/۱	1	Experiment	
12 <sup>th</sup> 46 programming.  47 LCD, A/D, D/A and RTC interface with programming.  48 practice and Revision  48 Recap- Design and Interface  49 Recap- Design and Interface  50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  55 Revision  56 Practice and Revision  70 2 2 2 2 2 3 3 4 2 4 4 4 4 5 2 4 5 4 6 4 6 4 6 4 6 4 6 4 6 6 6 6 6 6 6				Π	1		
12 <sup>th</sup> 46 programming.  47 LCD, A/D, D/A and RTC interface with programming.  48 practice and Revision  48 Recap- Design and Interface  49 Recap- Design and Interface  50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  55 Revision  56 Practice and Revision  70 2 2 2 2 2 3 3 4 2 4 4 4 4 5 2 4 5 4 6 4 6 4 6 4 6 4 6 4 6 6 6 6 6 6 6	12 <sup>th</sup>	45		-dn	2	Practice and Revision	
46 programming.  LCD, A/D, D/A and RTC interface with programming.  LCD, A/D, D/A and RTC interface with programming.  48 LCD, A/D, D/A and RTC interface with programming.  3 Practice and Revision  3 Practice and Revision  1 1 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3				Gro	3	-	
12 <sup>th</sup> 47   LCD, A/D, D/A and RTC interface with programming.  LCD, A/D, D/A and RTC interface with programming.  48   LCD, A/D, D/A and RTC interface with programming.  49   Recap- Design and Interface  50   Introduction of PIC Micro controllers  51   Introduction of PIC Micro controllers  52   Introduction of PIC Micro controllers  53   Revision  54   Revision  55   Revision  56   Revision  57   Revision  58   Revision  19   Practice and Revision  10   Practice and Revision  11   Practice and Revision  12   Practice and Revision  13   Practice and Revision  14   Practice and Revision  14   Practice and Revision  15   Practice and Revision  16   Practice and Revision  17   Practice and Revision  19   Practice and Revision  10   Practice and Revision  10   Practice and Revision  11   Practice and Revision  11   Practice and Revision  12   Practice and Revision		46					
13 <sup>th</sup>   2   2   2   2   2   2   2   2   2							
48 programming.  49 Recap- Design and Interface  49 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  5 Practice and Revision  7 D 2 Practice and Revision  1 D 2 Practice and Revision				2	2	Practice and Revision	
48 programming.  49 Recap- Design and Interface  49 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  5 Practice and Revision  7 2 Practice and Revision  1 2 Practice and Revision  7 3 Practice and Revision  1 1 2 Practice and Revision  1 1 2 Practice and Revision  1 1 2 Practice and Revision		47		-dno			
48 programming.  49 Recap- Design and Interface  10 Practice and Revision  50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  1 Practice and Revision  1 Practice and Revision  1 1			LCD, A/D, D/A and RTC interface with	Gro	3	-	
13 <sup>th</sup> 50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  Recap- Design and Interface  1 2 Practice and Revision  2 Practice and Revision  1 2 Practice and Revision  1 1 2 Practice and Revision  1 1 2 Practice and Revision  1 1 2 Practice and Revision		48					
13 <sup>th</sup> 50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  Recap- Design and Interface  1 2 Practice and Revision  2 Practice and Revision  1 2 Practice and Revision  1 2 Practice and Revision  1 1 2 Practice and Revision  1 1 2 Practice and Revision					4		
13 <sup>th</sup> 50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  1 Practice and Revision  1 Practice and Revision  1 1 2 2 3 4 4 4 4 5 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6		49	Recap- Design and Interface	0-1		Practice and Revision	
13 <sup>th</sup> 50 Introduction of PIC Micro controllers  51 Introduction of PIC Micro controllers  52 Introduction of PIC Micro controllers  53 Revision  54 Revision  1 Practice and Revision  1 Practice and Revision  1 1 2 2 3 4 4 4 4 5 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6				roup	2		
S1   Introduction of PIC Micro controllers   S2   Introduction of PIC Micro controllers   S3   Revision   S4   Revision   S4   Revision   S4   Revision   S4   Revision   S4   Revision   S5   Revision   S6	1 2 <sup>th</sup>	F0	Introduction of PIC Micro controllers	Ġ	3		
52 Introduction of Pic Wilcro Controllers  53 Revision  54 Revision  14th  14th	13"	50		.5	1	Practice and Revision	
52 Introduction of Pic Wilcro Controllers  53 Revision  54 Revision  14th  14th		51	Introduction of PIC Micro controllers	dno	2		
The second revision and Revisio		52	Introduction of PIC Micro controllers	Gr	3		
14 <sup>th</sup> Revision	14 <sup>th</sup>	53	Revision	Group-1		Practice and Revision	
14 <sup>th</sup> Revision			Tevision				
14		54	Revision				
S5 Revision 2 Practice and Revision				7			
		55	Revision	-dn	2	Practice and Revision	
5 3			Participa.	Gro	3		
56 Revision		56	Revision				
	15 <sup>th</sup>	57	Seminar	Group-1	1	Practice and Revision	
Seminar $\frac{\dot{G}}{2}$ Practice and Revision					2		
ق <u>3</u>		58	Assignment- 3  Sessional Test- 3  Revision	Gra	3		
15 <sup>th</sup> 58 Assignment- 3					1	Practice and Revision	
				5			
59 Sessional Test- 3 2 Practice and Revision		59		-dn	2		
60		60		Gro	3		
Revision 5		60			3		