**SUB    :    Microcontrollers**                    **Faculty  :    Sh. Sandeep  Gejwal**

**SEM    :    5**[TH]                                  **Branch    :    ECE**

| Week | Lecture | Name of Topic | Experiment |
|---|---|---|---|
| 1st | 1 | Introduction with microcontrollers | Familiarization with Micro-controller Kit and its different sections |
| | 2 | Introduction with microcontroller 8051 | |
| | 3 | Architecture of 8051Microcontroller | |
| 2nd | 4 | 8051Microcontroller Pin details | Familiarization with Assembly Language Programming |
| | 5 | Function of 8051Microcontroller Pins | |
| | 6 | I/O Port structure | |
| 3rd | 7 | Memory Organization of internal RAM | Programming to interface switches and LEDs |
| | 8 | Memory Organization-– internal ROM | |
| | 9 | Special Function Registers (SFRs) - types | |
| 4th | 10 | External Memory | Revision and Viva |
| | 11 | Instruction Set of 8051 –data transfer instructions, arithmetic and logical instructions. | |
| | 12 | Instruction Set of 8051-bit manipulation and branching | |
| 5th | 13 | Addressing Modes and Types of Instructions on basis of size of operations and operand with examples | Programming and interface of Seven Segment and LCD. |
| | 14 | Timer operation | |
| | 15 | Serial Ports | |
| 6th | 16 | Revision | Programming and interfacing of Graphical LCD . |
| | 17 | Revision | |
| | 18 | **1**st **Sessional test** | |
| 7th | 19 | Interrupts, Types of interrupts | Programming to interface Hex 4x4 matrix Keypad |
| | 20 | Introduction to MC programming | |
| | 21 | MC programming | |
| 8th | 22 | MC programming | Revision and Viva |
| | 23 | 8051 data types | |
| | 24 | Assembler directives | |
| 9th | 25 | Assembler directives | Programming for |

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| | 26 | Assembler operation | A/D converter, result on LCD. |
| | 27 | Compiler operations | |
| 10th | 28 | De bugger | Programming for D/A converter, result on LCD. |
| | 29 | Revision | |
| | 30 | Revision | |
| 11th | 31 | **2<sup>nd</sup> Sessional test** | Revision and Viva |
| | 32 | Introduction to Design and Interface | |
| | 33 | Keypad interface & its Programming | |
| 12th | 34 | 7- segment interface & its Programming | Programming for serial data transmission from PC to Kit or Vice versa. |
| | 35 | LCD interfacing & its Programming | |
| | 36 | A/D interfacing & its Programming | |
| 13th | 37 | D/A interfacing and its Programming | Programming and interfacing of RELAY and Buzzer |
| | 38 | RTC interfacing & its Programming | |
| | 39 | Introduction to PIC Micro controllers | |
| 14th | 40 | PIC Micro controllers | Revision and Viva |
| | 41 | Basic block Diagram of PIC microcontrollers | |
| | 42 | Features of PIC microcontrollers | |
| 15th | 43 | Revision | Revision and viva |
| | 44 | Revision | |
| | 45 | **3<sup>rd</sup> Sessional test** | |
| 16th | 46 | Revision | Revision |
| | 47 | Revision | |
| | 48 | Revision | |