<table>
<tr><th>Sr No</th><th>AIM</th><th>Date</th></tr>
<tr><td>1.</td><td>(i) Introduction to Keil software and basics steps of project create for AT89C51 microcontroller
(ii) Introduction to Data Transfer, Logical and Arithmetic instructions. Explain all addressing mode for all the instruction with example for data transfer and logical e of Instruction.
(iii) Write a program to double the 8-bit number Stored in R2. Store the result in to the R4.
(iv) Write a program to half the 8-bit number stored in R6. Store the result into the R6.</td><td>3-08-2022</td></tr>
<tr><td>2</td><td>(i) Write an assemble language code to get square of decimal number 0 to 9 using MOVC instruction. Square of each number is store in code memory starting from 100H. Store the result at memory location starting from 50H.
(ii) Write an assemble language code to get the 10 different 8 bit data from the external memory location and store the half of the each data to the direct memory location. consider External memory location starting at 1001H and direct memory location starting at 20H.(Hint: Use MOVX and logical rotate instruction)
(iii) Invert the number stored at the R5 and save the inverted number into the R4</td><td>10-08-2022</td></tr>
<tr><td>3</td><td>(i) Write a program to do Addition of 4 Different 8-bit unsigned number as given below. (Use Assembly Language) Store the result on R4 of Bank 0 and Carry to the R5 of Bank 0
<table>
<tr><th>Registers Bank</th><th>Register</th><th>Value</th></tr>
<tr><td>0</td><td>R0</td><td>23H</td></tr>
<tr><td>1</td><td>R0</td><td>A2H</td></tr>
<tr><td>2</td><td>R0</td><td>ABH</td></tr>
<tr><td>3</td><td>R0</td><td>1AH</td></tr>
</table>
(ii) Write an assembly language program to find 16 bit addition from two 16 bit number stored at internal and external memory.
(iii) 3. Write an assembly language program to add two different BCD number stored at memory location 40H and 41H. Stored the result at 42H after performing Decimal Adjustment on the result.
(iv) Write an assembly language code to multiply two 8 bit number using repeated addition method.</td><td>17-08-2022</td></tr>
<tr><td>4</td><td>(i) Write an ALP to toggle port pin 2 of port 0 with interval of 2 msec. (Use MOV and DJNZ to generate delay).(Assume that XTAL = 11.0592 MHz)
(ii) Write a program to toggle all the bits of the port 1 by sending to it values 55H and AAH continuously. Put a time delay in between each</td><td>31-08-2022</td></tr>
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<td>issuing of data to port 1. Use LCALL instruction to introduce time delay and SJMP for continuous operation.
(iii) Write an assembly language program to generate square wave of 100Hz frequency on port pin 1 of port 1. (Use timer 0 in mode 1 with external hardware control) (Assume that XTAL = 11.0592 MHz)
(iv) Write an assembly language to counter event on port pin P3.5 and display the event on to the PORT 1. (Assume that XTAL = 11.0592 MHz)
(v) write an assembly language program to generate a square wave of 2 kHz frequency on pin P1.5.(set timer 1 in mode 2 with software control) (Assume that XTAL = 11.0592 MHz)</td>
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<td>5</td>
<td>(i) Write a C program to read the P1.0 and P1.1 bits and issue as ASCII character to P0 according to the following table.
<table>
<tr><th>P1.1</th><th>P1.0</th><th>Data to be send on Port 0</th></tr>
<tr><td>0</td><td>0</td><td>Send “0”</td></tr>
<tr><td>0</td><td>1</td><td>Send “1”</td></tr>
<tr><td>1</td><td>0</td><td>Send “2”</td></tr>
<tr><td>1</td><td>1</td><td>Send “3”</td></tr>
</table>
(ii) Write a 8051 C code to generate Square wave with period of 500ms on Port Pin P2.0.
Note: Use Nested for loop method to Generate Delay
(iii) Write a C program to toggle all the bit’s of the Port P0 continuously with a 500 ms delay. Use function (without using timer) to generate the require delay.
(iv) Write an 8051 C program to generate square wave of 100 ms on P1.5. Use timer 1, mode-1 to create the Delay (without using timer Interrupt).
(v) Write a C Program using timer interrupt to generate 10KHz Frequency on P2.1 using timer 0 in auto-reload mode.</td>
<td>14-09-2022</td>
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<td>6</td>
<td>(i) Write a C code to send data serially based on the UART received data. (XTAL= 11.0592 MHZ)
i. If the received data is “1” then serially send “E”.
ii. If the received data is “2” then Serially send “C”.
iii. If the received data is “3” then Serially send “I”.
(ii) Write a 8051 C code to send data to IO Port with below conditions. (XTAL= 11.0592 MHZ)
i. If P2.0 is one (HIGH) then send data “E” to Port 1 else send data “C” to Port Also generate square wave with 200 µsec of period on pin Port 0.0.Note: Use timer 0 interrupt in 8 bit mode to generate square.</td>
<td>21-09-2022</td>
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	(iii) Write a C program using timer 0 as interrupt for Square wave generation and Serial interrupt for Serial communication to do following conditions. a. When Switch 1 is presses it generate 5 KHz square wave on Port Pin P1.1 continuously. Also send '1" on Serial Port. b. When Switch 2 is presses it generate 10 KHz square ware on Port Pin P1.1 continuously. Also send '2" on Serial Port. c. When both Switches Press then "N" is send serially and if both switches are open send "O" Serially. **Assume switch 1 is connected on P0.1 and switch 2 is connected to P0.2. Provide Delay 1000ms in between switch scanning and also gives delay of 10ms after each condition check.(XTAL = 11.0592 MHz, Set the baud rate at 9600)**	