Printed Pages:1 **Sub Code: MTEE-201**

Paper Id: 220210 **Roll No.** | | | | | | | | | | |

M. TECH
(SEM-II) THEORY EXAMINATION 2018-19
MICROCONTROLLER & ITS APPLICATIONS

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a. Explain the instructions(i)MOVC A,@A+DPTR (ii)MOVX A,@A+DPTR
b. Differentiate between MCS8784 and MCS 8051.
c. Explain function of RESET Signal in Internal blocks of MCS51 micro controllers
d. Differentiate between Von Neuman and Harward Architectures
e. What will be the value loaded in TH0 and TL0 in 8051 to get a delay of 5msec?
f. How RISC and CISC are different from each other?
g. What is the difference between MODE1, 2 and 3 of serial communication?

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. Explain and Draw the Architecture of 8051 micro controller with each block.
b. Write a Program which can Interface Stepper Motor with 8051 micro controller and also show with diagram the connections of Interfacing.
c. Develop a subroutine and then Program a DC motor interfaced with 8051which can run at alternatively Fast and Slow speeds.
d. Explain all the addressing modes of PIC18FXX2 microcontroller with example of each.
e. Design a circuit with 8052 interfaced with an External 6264 RAM in such a manner so that the RAM may be used as Data Memory as well as Program Memory.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a) An array of random integers is placed from internal data memory locations 51H onwards. The number of terms (N) of the array is available in the location 40H. Develop a program to place the entire array in reverse order in the same memory area.
(b) Explain following registers of 8051 micro controller in Detail (i) TMOD register (ii) TCON register(iii)PSW register (iv) SFR registers (v) DPTR register

4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain all the addressing modes of any of MCS51 family of micro controllers with example of each.
(b) Using 89CXX ATMEL controllers generate a square wave of frequency of 100 Hz by using Flash Memory Square Wave Generation method.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Define and Explain Software and Hardware Interrupts of PIC18FXX2 micro controller. Show with Interrupt Vector Diagram Priority of Interrupts.
(b) Explain and Draw the Architecture of PIC18FXX2 micro controller with each block.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain the following features of MOTOROLA 68HC11 micro controller (i) Watch Dog Features (ii) Timer Systems (iii) Analog to Digital Conversion Features
(b) Explain the following features of MOTOROLA 68HC11 micro controller (i) Input Capture Features (ii) Output Capture Features (iii) Pulsed Accumulator Features

7. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a Program to generate a Pulse of 3msec ON Time and 10msec OFF Time with Timer1 of MCS51 micro controller using XTAL of 11.0592MHz.
(b) Write a Program which can Interface 16*2 LCD of 5*7 Dot matrix with 8051 micro controller and also show with diagram the connections of Interfacing.