T.E. Electronic & Telecommunication
Sem V / Rev

Con. 3429-10. (REVISED COURSE) AN-4285

Microprossors & Microcontroller - I

(3 Hours) [Total Marks : 100

N.B. (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from remaining **six** questions.
(3) Assume **data** if **necessary**.

1. (a) (i) Interface 16 KB RAM memory chip to 8085 using Absolute decoding technique. 4
(ii) Modify the address decoding circuit in the above design to incorporate partial decoding and thus explain the difference between Absolute decoding technique and partial decoding technique. 4
(b) (i) Draw and explain the formats of Interrupt Enable SFR and Interrupt Priority SFR of 8051. 4
(ii) Write a program to enable all the interrupts of 8051 and set the priority of all interrupts of 8051 to low level. 4
(c) Explain any two addressing modes of ARM processor with suitable examples. 4

2. (a) Analyze the given subroutine and answer the following :—

```
    MVIC, O5H
up  MOV A, C
    DCRC
    JNZ up
    RET
```

(i) Calculate the time delay produced by the given subroutine. Assume the crystal frequency of 8085 to 6MHz. 5
(ii) Calculate the maximum time delay that can be produced by the given subroutine. Assume the crystal frequency of 8085 to 6 MHz. 5
(b) Draw and explain the Internal Memory Organization of 8051. 10

3. (a) Assume an oscillator running at 12 MHz controls 8051 micro controller. Write a program to generate 2 KHz square wave on $P_{1.0}$ using Timer 0 in mode 1. 10
(b) Interface 8155 to 8085 in memory mapped I/O mode using Absolute decoding technique. 10

4. (a) Analyze the given program and answer the following :—

```
MVIA, 4 BH
SIM
EI
HLT
```

(i) What is the status (Masked/Unmasked) of 5 Hardware interrupts of 8085 after executing the program and why ? 5
(ii) What is the status of SOD pin after executing the program and why ? 5
(b) (i) Draw and explain the internal structure of port 0 of 8051. 6
(ii) Explain the features of port 3 of 8051. 4

5. (a) Interface single 8259 to 8085 in I/O mapped I/O mode using Absolute decoding technique. **10**

(b) (i) Compare the Power down mode and Idle mode of 8051. **6**

(ii) Explain any four, bit level instructions of 8051. **4**

6. (a) (i) Write a program to continuously turn ON and OFF a LED Connected to PC_5 of Port C of 8255 using BSR mode (8255 is connected to 8085). **6**

(ii) Specify the number of Machine cycles, T-states, addressing mode and number of bytes for the instruction POP PSW and INR M of 8085. **4**

(b) Explain the key features of ARM Processor Architecture. **10**

7. (a) Draw and explain Timing Diagram for the instruction LDAX B of 8085. **10**

(b) Specify and explain any five instructions of ARM processor. **10**