

Con. 5327-09.

(REVISED COURSE)

SP-8609

(3 Hours)

[Total Marks : 100]

N.B. : (1) Question No. 1 is compulsory.

(2) Attempt any four questions from remaining six questions.

1. (a) Program Timer 1 of 8051 to generate 1kHz square wave on P_{2.1} using mode 1. 8
Assume crystal frequency to 12 MHz.
- (b) Interface 8 KB EPROM and 4 KB RAM to 8085 using absolute decoding technique. 8
- (c) Explain any four important features of ARM Processor Architecture. 4

2. (a) (i) Compare the Hardware and Software interrupts of 8085. 5
(ii) Write a program to Mask RST 7.5, RST 6.5 and Unmask RST 5.5 and to output serial data logic '1' on SOD pin, using SIM register. 5
- (b) Compare the features of 89C51, 89C52, 89C2051 and 89C2052. 10

3. (a) Analyze the given program and answer the following :-
(i) What is the value of register E after executing the program and why? 6
(ii) How many memory locations will be occupied for storing the given program in the memory and why? 4

```

      MVIE, OOH
      LXIB 0505 H
      MOV A,C
      SUB B
      PUSH PSW
      POP B
      MOV A,C
      ANI 40 H
      MVI A, 00 H
      JZ down
      INRE
      down : HLT
    
```
- (b) Draw and explain the internal structure of Port 1 and Port 3 of 8051. 10

4. (a) (i) Explain the Enable/Disable status of individual interrupts of 8051 if the contents of Interrupt Enable SFR = 8 FH. 5
(ii) Explain the priority status of individual interrupts of 8051 if the contents of Interrupt Priority SFR = 14 H. 5
- (b) Interface 8255 to 8085 in I/O mapped I/O mode using Absolute decoding technique. Generate the control word to program all ports of 8255 as output ports in simple mode. 10

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5. (a) (i) Explain the 8253 control register format and generate control word to set counter 0 in mode 3 with BCD counting and loading only LSB count. 5
 (ii) Explain Fully Nested mode and Special Fully Nested mode of 8259. 5
 (b) (i) Explain the difference between SJMP, AJMP and LJMP instructions of 8051. 5
 (ii) Describe the ways to terminate from idle mode and power down mode of 8051. 5
6. (a) Calculate the time delay produced by the following subroutine. Assume the crystal frequency of 8085 to 6 MHz. 10

```

LXIB FFFE H
up: DCX B
    MOV A,C
    MOV E,C
    ORA B
    JNZ up
    RET
  
```

- (b) Explain the addressing modes of ARM processor. 10

7. (a) Explain the following instructions of ARM processor :- 10

- (i) ADD R_0, R_1, R_2
- (ii) SBC R_0, R_1, R_2
- (iii) CMP R_0, R_1
- (iv) MUL R_3, R_2, R_1
- (v) MLA R_4, R_3, R_7, R_8 .

- (b) Assuming the address of control register of 8155 as 80H, explain the status of ports and timer of 8155 after executing following program :- 10

```

MVI A, 04 H
OUT 84 H
MVI A, 40 H
OUT 85 H
MVI A, CI H
OUT 80 H
HLT.
  
```