

Seat No. : _____

N14-112

November-2014

B.Sc., Sem.-V

ELE : 302 – Electronics

(Digital Electronics & Microprocessor)

Time : 3 Hours]

[Max. Marks : 70

1. (a) Draw a circuit of MOD-8 parallel binary counter and explain it's working. **7**

OR

Draw a circuit of synchronous 4 bit up-down counter and explain its working.

- (b) Draw a circuit of decade counter and explain its working. **7**

OR

Explain about Moore model and Mealy model.

2. (a) Draw a signal diagram of IC 8085 and explain all 6 groups in detail. **10**

OR

Explain about memory interfacing by using timing diagram of memory read and memory write cycle.

- (b) Explain about 'Generating Control Signals'. **4**

OR

Draw the timing diagram of MVI A, 32 H instruction.

3. (a) Write a program to do the following : **7**

(1) Load the number 30 H in register B & 39 H in register C.

(2) Subtract 39 H from 30 H.

(3) Display the answer at port 01 H. Also discuss the content of Accumulator and carry flag.

OR

Draw the timing diagram of out instruction and explain in detail.

- (b) Explain about execution of memory related data transfer instruction with timing diagram. **7**

OR

Explain about Data transfer, Logical and branch instruction.

4. (a) A set of 3 reading is stored in memory location starting at CO 60 H. Arrange them in ascending order. 7
Data (H) 87, 56, 45.

OR

A set of 6 readings is stored in memory location starting at CO 50 H. Write a program to

- (1) Add only positive readings
- (2) Store FF H in memory location CO 90 H when sum exceeds 8 bits otherwise store the sum.

Data (H) A2, B1, 07, 95, 32 AND 41

- (b) The following block of data is stored in memory location from CO 55 H to CO 5 A H. Transfer the data to the location CO 80 H to CO 85 H in reverse order. 7
Data (H) 22, A5, 92, 91, B2, C3.

OR

The memory location CO 50 H hold the data byte F7 H. Write the instruction to transfer the data byte to accumulator using 3 different OP codes MOV, LDAX & LDA.

5. Explain about the following instructions : 14

- (1) RLC
 - (2) RAL
 - (3) RRC
 - (4) RAR
 - (5) MOV A, B
 - (6) XRA A
 - (7) ORA C
 - (8) SUB B
 - (9) INX H
 - (10) INR C
 - (11) CMP M
 - (12) JC CO 10 H
 - (13) MVI B, 10 H
 - (14) JPO CO 10 H
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