

Seat No. : _____

AC-118

April -2018

B.Sc., Sem.-VI

CC-308 : Electronics

Time : 3 Hours]

[Max. Marks : 70

- Instructions :** (1) All the questions carry equal marks.
(2) Symbols have their own meaning.

1. (a) Explain about R-2R type D/A converter. Also draw the circuit of 4 bit D/A converter using input gates, flip-flop, level amplifier & resistive divider network. **10**

OR

Give logic diagram of 3 bit simultaneous type A/D converter & explain it's working in detail.

- (b) Calculate V_A for 5 bit resistive Divider network having input 10110. Here, 0 = 0 V & 1 = 10 V. **4**

OR

Calculate the output voltage for binary ladder circuit having digital input 1000. Here, 0 = 0 V & 1 = 10 V.

2. (a) Write a program to count 0 to 9 with 2 sec delay between each count. After count 9 it restart to 0 & repeat the sequence continuously. Clock frequency = 0.5 MHz. **10**

OR

Write a program to count continuous hexadecimal numbers FFH to 00H in a system of 0.5 μ s. Use register C to set up 10 ms delay between each count.

- (b) Calculate internal delay and total delay for the following program having 1 T State = 0.5 μ s. (any one) **4**

(1) MVI B, 38 H
L-2 MVI C, FF H
L-1 DCR C
JNZ LOOP-1
DCR B
JNZ LOOP-2

(2) MVI B, 42 H
L-2 MVI C, DD, H
L-1 DCR C
JNZ LOOP-1
DCR B
JNZ LOOP-2

3. (a) Write a program to provide the given ON/OFF time to 3 traffic lights (G, Y & R) & two pedestrian signs (walk & Don't walk). 10

Lights	Data bits	ON time
Green	D ₁	20 sec
Yellow	D ₃	5 sec
Red	D ₅	25 sec
Walk	D ₆	20 sec
Don't walk	D ₇	30 sec

The traffic & pedestrian flow are in same direction and pedestrian should cross the road when green light is on.

OR

Write a 20 ms time delay subroutine using register pair BC. Clear the Z flag without affecting any other flags in the flag register & return to the main program.

- (b) Explain about 8 RST instructions of 8085. 4

OR

Give difference & Similarity between CALL & RET, PUSH & POP.

4. (a) Draw the block diagram of 8255A & explain each block in detail. Also explain MODE O as simple input or output. 10

OR

Explain DAC 0808 giving its feature, pin configuration, block diagram & application.

- (b) Explain about control word of IC 8255 A. 4

OR

Write a program to generate square wave.

5. Answer in short : 14

- (1) _____ bit instructions such as DCX & INX do not affect flags.
- (2) Counter & time delay can be designed using _____.
- (3) _____ is a group of memory location.
- (4) A large software project is usually divided into subtasks called _____.
- (5) IC 8255A is a _____ pin DIP.
- (6) What is BSR ?
- (7) What is SAR ?
- (8) What is monotonicity test ?
- (9) Explain about the following instructions :

(i) CC	(ii) CZ	(iii) CP
(iv) RM	(v) RP	(vi) RPE