

Seat No. : 649

AD-116

April-2015

T.Y.B.Sc., Sem.-VI

Electronics : ELE-308

(Advance Digital Electronics & Microprocessor)

[Max. Marks : 70]

Time : 3 Hours]

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

~~(a)~~ Explain about counter type A/D converter in detail. 10

OR

~~(b)~~ Explain about successive approximation type A/D converter in detail. 4

- (b) For a 5 bit resistive divider, determine :
(1) Weight of L.S.B.
(2) The O/P voltage
Digital i/p is 10101. Here, 0 = 0 V and 1 = +10 V.

OR

Explain about monotonicity test of D/A converter.

2. Write a program to count from 0 to 9 with 1 sec. delay between each count. After count 9 it restart to 0 and repeat the sequence continuously. Clock frequency = 2 MHz. 10

OR

Write a program to generate continuous square wave with period of 400 μ s. Assume that the system clock period is 300 ns. Use bit D₀ to O/P of the square wave. 288 4

- (b) Explain time delay using a register pair.

OR

Explain time delay using a loop within a loop technique.

3. (a) Write a program to provide the given ON/OFF 3 traffic lights and 2 pedestrian sign. 10

Lights	Data bits	ON time
Green	D ₀	20 sec.
Yellow	D ₂	5 sec.
Red	D ₄	25 sec.
Walk	D ₆	20 sec.
Don't walk	D ₇	30 sec.

Pedestrian should cross the road when green light is on.

OR

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Write a program to perform following :

- (1) Clear all the flags
- (2) Load 00H in reg A and show that zero flag is not affected.
- (3) Logically OR the accumulator with itself to set zero flag and display at O/P Port 1 and store all the flags on the stack.

Give difference and similarity between CALL and RET, PUSH & POP.

OR

What is RST ? List all RST instructions.

4. Draw the block diagram of 8255 A and explain each block in detail. Also explain MODE 0 as simple input or output.

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OR

Explain about the following DAC applications

- (1) Saw tooth wave
- (2) Square wave
- (3) Triangular wave

5. Answer in short : (any 14)

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- (1) Give the full form of OS.
- (2) What is SAR ?
- (3) LXI B, 2348 H require how many T states ?
- (4) ORA B require how many T states ? 6 4
- (5) What is the use of stack and subroutine ?
- (6) A large software project is usually divided into subtasks, known as f
- (7) How many byte required for CALL instructions ? 4
- (8) For masking of data bits, which instruction is used ?
- (9) What is BSR ? BSR set bits
- (10) In which mode all ports function as simple I/O ? f

Explain about the following instructions :

- (11) CNC
- (12) CNZ
- (13) CPE
- (14) RZ
- (15) RM
- (16) RPO