

AD-116

April-2015

T.Y.B.Sc., Sem.-VI**Electronics : ELE-308****(Advance Digital Electronics & Microprocessor)****Time : 3 Hours]****[Max. Marks : 70**

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

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

OR

Explain about successive approximation type A/D converter in detail.

- (b) For a 5 bit resistive divider, determine : **4**

(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. (a) 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. Close frequency = 2 MHz. **10**

ORWrite a program to generate continuous square wave with period of 400 μ s. Assume that the system clock period is 300 ns. Use bit D_0 to O/P of the square wave.

- (b) Explain time delay using a register pair. **4**

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

Write a program to perform following :

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- (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.

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

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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.

14

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) LX1 B, 2348 H require how many T states ?
- (4) ORA B require how many T states ?
- (5) What is the use of stack and subroutine ?
- (6) A large software project is usually divided into subtasks, known as _____.
- (7) How many byte required for CALL instructions ?
- (8) For masking of data bits, which instruction is used ?
- (9) What is BSR ?
- (10) In which mode all ports function as simple I/O ?

Explain about the following instructions :

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