

Seat No. : 4104

**SJ-120**  
**September-2020**  
**B.Sc., Sem.-VI**  
**CC-308 : Electronics**

**Time : 2 Hours]**

**[Max. Marks : 50**

- Instructions :** (1) All question in Section – I carry equal marks.  
(2) Attempt any **three (3)** questions in Section – I.  
(3) Question **9** in Section – II is compulsory.

**Section – I**

1. (A) Explain about R/2R type D/A converter in detail. 7  
(B) Explain about 3 bit simultaneous A/D converter in detail. 7
2. (A) Explain about counter type A/D converter. 7  
(B) For a 5 bit resistive divider, determine 7  
(1) Weight of L.S.B.  
(2) Weight of M.S.B.  
(3) The O/P voltage  
Here, Digital input is 10100 & 0 = 0V & 1 = + 10V.
3. (A) Write a programme to count from 0 to 9 with 3 sec. delay between each count. 7  
After count 9 it restart to 0 & repeat the sequence continuously. Clock frequency = 3 MHz.
- (B) Write a programme to generate continuous square wave with period of 500  $\mu$ s. 7  
Assume that system clock period is 200 ns. Use bit D<sub>0</sub> to O/P of the wave.

4. (A) Explain time delay using a register pair. 7  
 (B) Explain time delay using a loop within a loop technique. 7

5. (A) Write a programme to provide the given ON/OFF 3 traffic lights & 2 pedestrian signs. 7

Lights	Data bits	ON time
Green	D0	20 sec.
Yellow	D2	5 sec.
Red	D3	25 sec.
Walk	D5	20 sec.
Don't walk	D6	30 sec.

Pedestrian should cross the road when green light is on.

- (B) What is RST ? List all RST instructions. 7

6. (A) Write a programme to perform following : 7

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

- (B) Give difference & similarity between Call & RET, PUSH & POP. 7

7. (A) Draw the block diagram of 8255A & explain each block in detail. 7

- (B) Explain about control word of IC 8255A. 7

8. Explain about the following DAC application :

- (A) Square wave 7

- (B) Saw-tooth wave 7

Section – II

9. Attempt any **Eight** :

8

- (1) What is quantization error ?
- (2) Give the full form of SAR.
- (3) What is resolution of 4 bit DAC ?
- (4) Give the full form of OS.
- (5) What is Linearity ?
- (6) 16 bit instructions such as \_\_\_\_\_ & \_\_\_\_\_ do not affect the flag.
- (7) MV1 A, 36 H requires \_\_\_\_\_ T states.
- (8) ORA C, requires \_\_\_\_\_ T states.
- (9) LX1 B, 2345 H requires \_\_\_\_\_ T states.
- (10) A stack is a \_\_\_\_\_ bit register.
- (11) 8085 instruction set includes \_\_\_\_\_ restart instructions.
- (12) A large softer project is usually divided into subtask known as \_\_\_\_\_.
- (13) Give the full form of BSR.
- (14) In which mode all ports functions as simple I/O ?
- (15) Give the name of two programmable devices of Intel family.
- (16) List the operating mode of 8255A.  
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