Seat No. : _____

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. After count 9 it restart to 0 & repeat the sequence continuously. Clock frequency = 3 MHz. **7**

   (B) Write a programme to generate continuous square wave with period of 500 μs. Assume that system clock period is 200 ns. Use bit D_0 to O/P of the wave. **7**

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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