2703N1135

Candidate's Seat No :_____

B.Sc. Semester-5 Examination

ELE-302 - Electronics

(Digital Electronics and Microprocessor)

Time : 2-30 Hours] **March-2025** **[Max. Marks : 70**

Instructions : (1) All questions are compulsory.
(2) All questions carry equal marks.
(3) Symbols used have their usual meaning.

1 (a) Explain about 2x mod 5, mod-10 counter in detail. 7
(b) Explain about 2x mod 3, mod-6 counter in detail. 7

OR

1 (a) Draw the circuit diagram of synchronous 4 bit up-down counter and explain its working. 7
(b) Explain about Moore model and Mealy model in detail. 7

2 (a) Draw a signal diagram of IC 8085 and explain in detail. 7
(b) Draw the timing diagram of memory Read cycle and explain in detail. 7

OR

2 (a) Explain about "Generating control signals". 7
(b) Draw the Flag register and discuss each flag in detail. 7

3 (a) Draw the timing diagram of instruction COOO OUT 01 H and explain in detail. 7
(b) Give comparison between memory mapped I/O and peripheral mapped I/O in detail. 7

OR

3 (a) Explain about Data transfer, Logical and Branch instruction. 7
(b) Give status of S, Z and CY Flags when contents of A=95 H and C=9 B H are added. 7

4 Write a program for transfer of 16 bytes of data stored in memory location CO 70 H to new location CO 90 H. 14
(Choose your own 16 bytes of data).

OR

4 A set of three readings is stored in memory locations starting at CO 50 H. Arrange them in ascending order. Data (H) 85, 41,59. 14

5 Answer the following (any seven) : 14
(1) How many Flip flops are required to construct mod-128 and mod 512 counter?
(2) How does a parallel counter differ from a serial counter?
(3) What is an excitation map?
(4) Give the full form of ALE and ALU.
(5) Why address bus is called unidirectional?
(6) What is the function of Accumulater?
(7) What is the difference between MOV and MVI instruction?
(8) What is the difference between CMP and CMA instruction?
(9) Discuss about STAX instruction.
Explain the following instructions.
(10) RLC
(11) INX H
(12) CMP M.