

**B.Sc. Semester-5 Examination**  
**ELE-302 - Electronics**  
**(Digital Electronics and MP)**

**Time : 2-30 Hours]****March-2024****[Max. Marks : 70**

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

- 1 ( a ) Draw a circuit of 2 x mod 5, mod 10 counter and explain its working. 7  
 ( b ) Write notes on decoding gates. 7

**OR**

- 1 ( a ) Draw a circuit of 2 x mode 3, mod 6 counter and explain its working. 7  
 ( b ) Explain Moore and Mealy models giving their state transition diagram of sequence detector. 7  
 2 ( a ) Draw a signal diagram of IC 8085 and explain all 6 groups in detail. 7  
 ( b ) Draw the timing diagram of MVI A, 61H instruction. 7

**OR**

- 2 ( a ) Explain about 'Generating control signals'. 7  
 ( b ) Draw FLAG register and brief about each flag. 7  
 3 ( a ) Explain about Data transfer, Branch and Arithmetic instruction in detail. 7  
 ( b ) Give comparison between memory mapped I/O and peripheral mapped I/O techniques of addressing. 7

**OR**

- 3 ( a ) Draw the timing diagram of "IN" instruction and explain in detail. 7  
 ( b ) Draw the timing diagram of "OUT" instruction and explain in detail. 7  
 4 ( a ) Sixteen bytes of data are stored in memory locations at DO90 H to DO9F H. Transfer the entire block of data to new memory location starting at EO40H. 7  
 ( b ) Accumulator data AA H & CY=O. Illustrate accumulator content after execution of instruction RRC twice. 7

**OR**

- 4 ( a ) A set of 3 reading is stored in the memory location starting at BO65 H. Arrange them in ascending order. 7  
     Data 95, 53, 41.  
 ( b ) Accumulator data AAH & CY=O. Illustrate accumulator content after execution of instruction RAR twice. 7

- 5 Attempt any seven out of 12 : 14  
 (1) How many Flipflop are required to constructed mod-256 and mod 1024 counter?  
 (2) Define Glitch.  
 (3) How does a parallel counter differ from a serial counter?  
 (4) The 8085 microprocessor use ..... bit data bus & ..... bit address bus.  
 (5) Which two instruction can make content of register A zero?  
 (6) State the difference between MOV and MVI instruction.  
 (7) Give the full form of ALE.  
 (8) Why do we demultiplex  $AD_7$  - ADO?  
     Explain about the following instructions:  
 (9) SUB C  
 (10) INX H  
 (11) HLT  
 (12) LDAX