

# National Institute of Technology, Delhi

Name of the Examination: **B. Tech/Mid-Semester October 2022**

Branch : Electronics and Communication Engineering

Semester : V

Title of the Course : Microprocessor and Microcontroller

Course Code : ECB 302

Time: 1.5 Hours

Maximum Marks: 25

1. What is the difference between subroutine and Interrupt service routine? (2)
2. What is SIM and RIM instruction? (2)
3. Write instruction to (a) load 00H in the accumulator (b) decrement the accumulator (c) Display the answer. Specify the answer you would expect at the output port. (2)
4. List the difference between memory mapped I/O & peripheral mapped I/O. (2)
5. Write a program to read the content in the stack register and put the value in BC register pair. (2)
6. Write an Assembly Language Program using 8085 instruction sets for  $c = (a^2 + b^2 + 2ab)$ . (2)
7. Write a program to add the Higher nibble and lower nibbles of a given B register and put the result in C register. (For example: if B= 45H then 4+5=09H C=09H). (2)
8. Write a program to read the content in the flag register and store into the memory address 9000H. (2)
9. XRA A  
MVI A, 87H  
ADI 79H  
MOV M,A  
Specify the content of the accumulator and the flag register. (2)
10. Draw the timing diagram for the instruction STAX. Assume all other relevant DETAILS. (3)
11. In the figure shown below specify the memory address range. (4)

