Birla Institute of Technology and Science, Pilani – KK Birla Goa Campus

EEE/ECE/INSTR F241

Lab 2

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1. Write a subroutine to find the product of two eight-bit numbers. You can assume the result is also 8-bit. Now using this procedure write an ALP to find the factorial of a number stored in address 0x1000. You can assume the factorial is less than 256. Store the result in address 0x1000.

2. Write a subroutine to compare two 8-bit numbers. The subroutine should return 0 if the first number is larger than the second one and 1 if the first number is equal to or smaller than the second one. Using this subroutine, write an ALP to find the largest number in an array of ten 8-bit numbers stored in memory starting from address 0x1000. The result should be stored in address 0x2000.

3. Using the same subroutine developed in the previous exercise, write an ALP to sort an array of ten 8-bit numbers stored in memory starting from address 0x1000.

4. Write an ALP to swap the contents of BC pair and HL pair without using any other additional general-purpose registers (you may use stack memory)

5. Write an 8085 procedure to find the nth number in a Fibonacci sequence using recursion (a procedure calling itself). You can assume the result is less than 256. Verify the procedure by finding the 9th number in the sequence assuming the sequence is 1,1,2,3,5…. And the 0th number in the sequence is 1. **(https://en.wikipedia.org/wiki/Fibonacci_sequence)**