

General notices: All program will be written by generic computer codes

1. Two 24 bits numbers (A and B) will be added.

- The bytes of A are stored in memory locations \$0100-\$0101-\$0102
- The bytes of B are stored in memory locations \$0200-\$0201-\$0202
- The result will be stored in memory locations \$0300-\$0301-\$0302-\$0303

Write the necessary program.

2. An array of 8 bit two's complement numbers is starting at address \$1000. The size of the array n ($n < 255$) is stored in memory at address \$0100.

Write a program to store the even numbers into EVEN and the odd number into ODD array. The starting address of EVEN array is \$2000 and the starting address of ODD array is \$3000. The number of even and odd number will be stored into \$4000 and \$4001 consecutively.

3. A microcomputer based speed meter for a wheel, will be designed. On the wheel there are 90 needles and a sensor is attached across the wheel. When a needle passes front of the sensor, sensor generates a pulse as shown on figure. The number of pulse in one second will be counted. The result will be displayed on 2 digit 7 segments display

- Draw the necessary hardware which consists of I/O interface, display, counter and sensor
- Write the necessary program for counting by using of interrupt technics
- Write the necessary program for display

