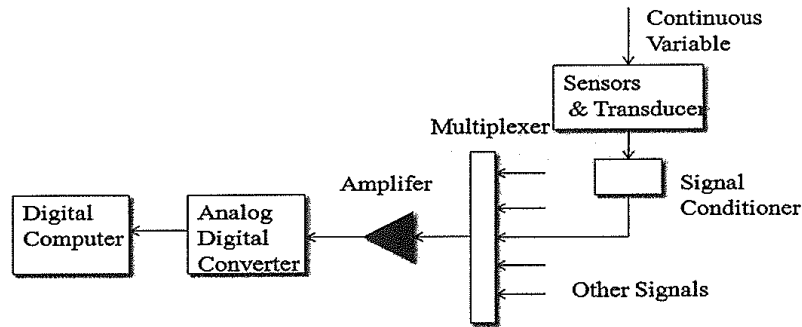




اجب عن التالي- الدرجة من 70 - كل سؤال 14 درجة

- 1- discuss types of actuators [DC motor, Servos motor, Stepper motor, Encoder], Pneumatics, Hydraulics
- 2- discuss types of sensors and elements affecting value of a sensor
- 3- discuss the next system



4- Using an ADC, a continuous voltage signal is to be converted into its digital counterpart. The voltage range is  $\pm 20$  V. The ADC has a 16-bit capacity, and full scale range of 40 V. Determine: number of quantization levels, resolution, and the error for ADC.

5- design a traffic point that gives red light for 60 sec, yellow light for 5 sec, and green light for 60 sec. plot ladder diagram for the programmed system