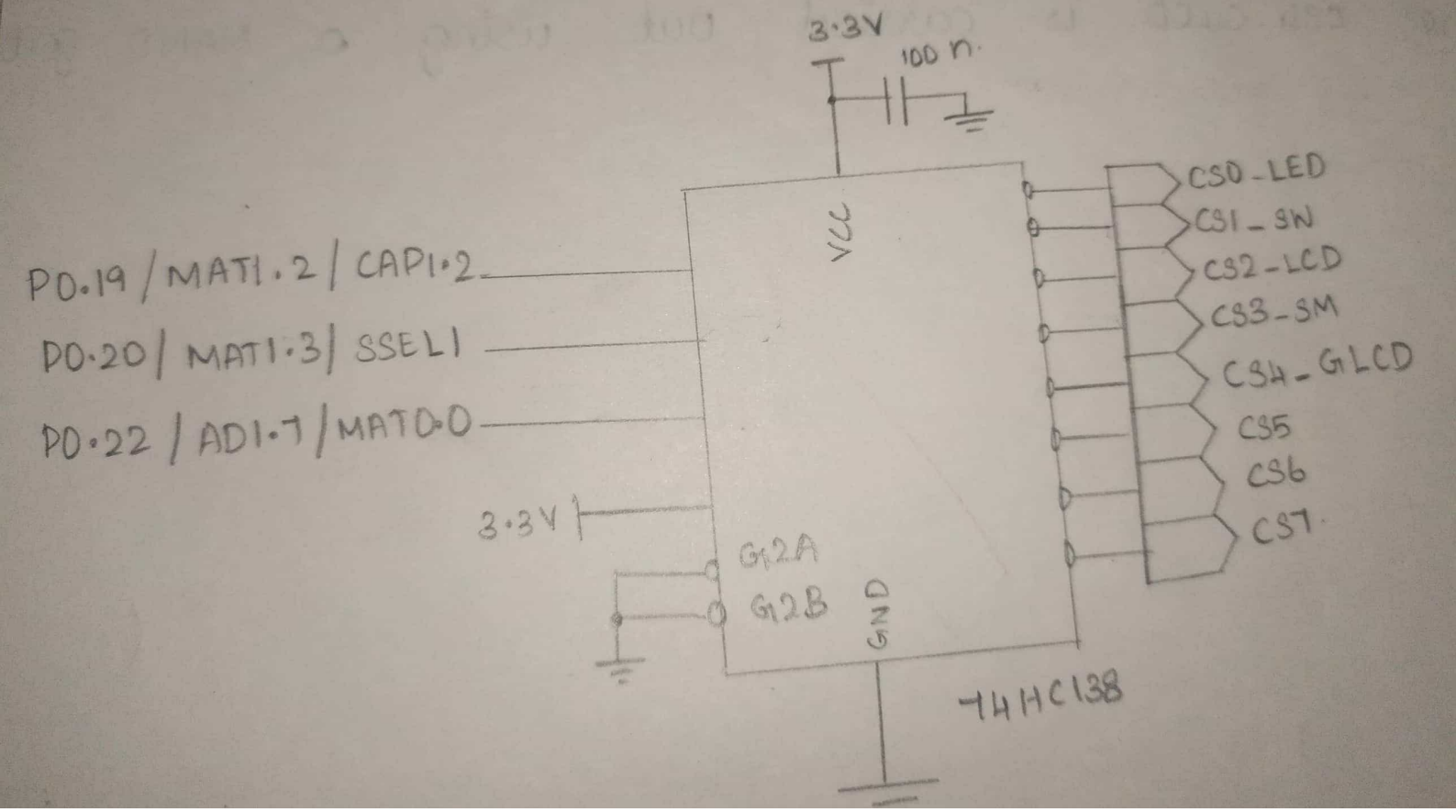
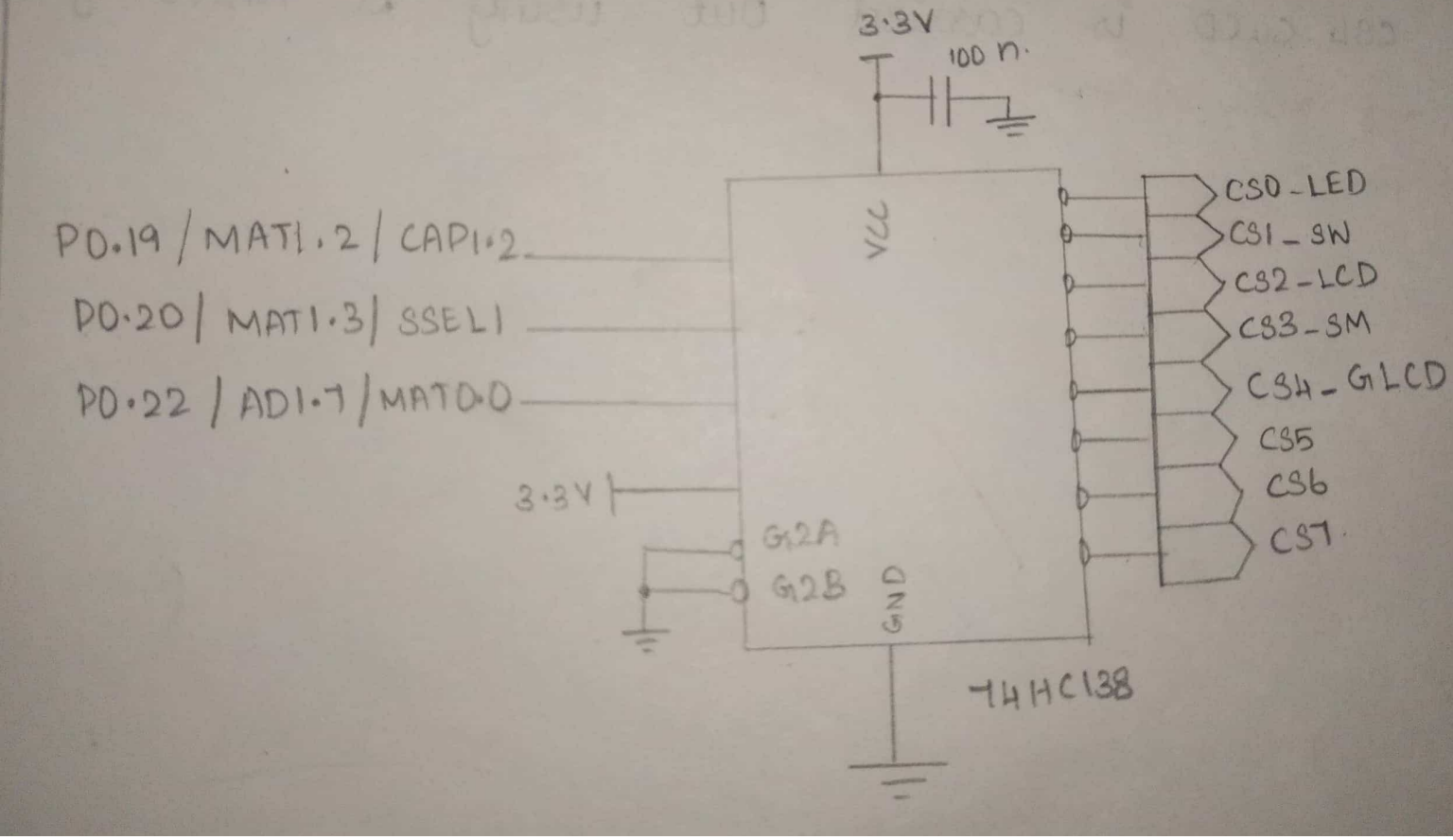
EX.NO:2

ADC


3.3V
100 n.
VCC
P0.19 / MAT1.2 / CAP1.2
P0.20 / MAT1.3 / SSEL1
P0.22 / AD1.7 / MAT0.0
3.3V
G2A
G2B
GND
74HC138
CS0 - LED
CS1 - SW
CS2 - LCD
CS3 - SM
CS4 - GLCD
CS5
CS6
CS7

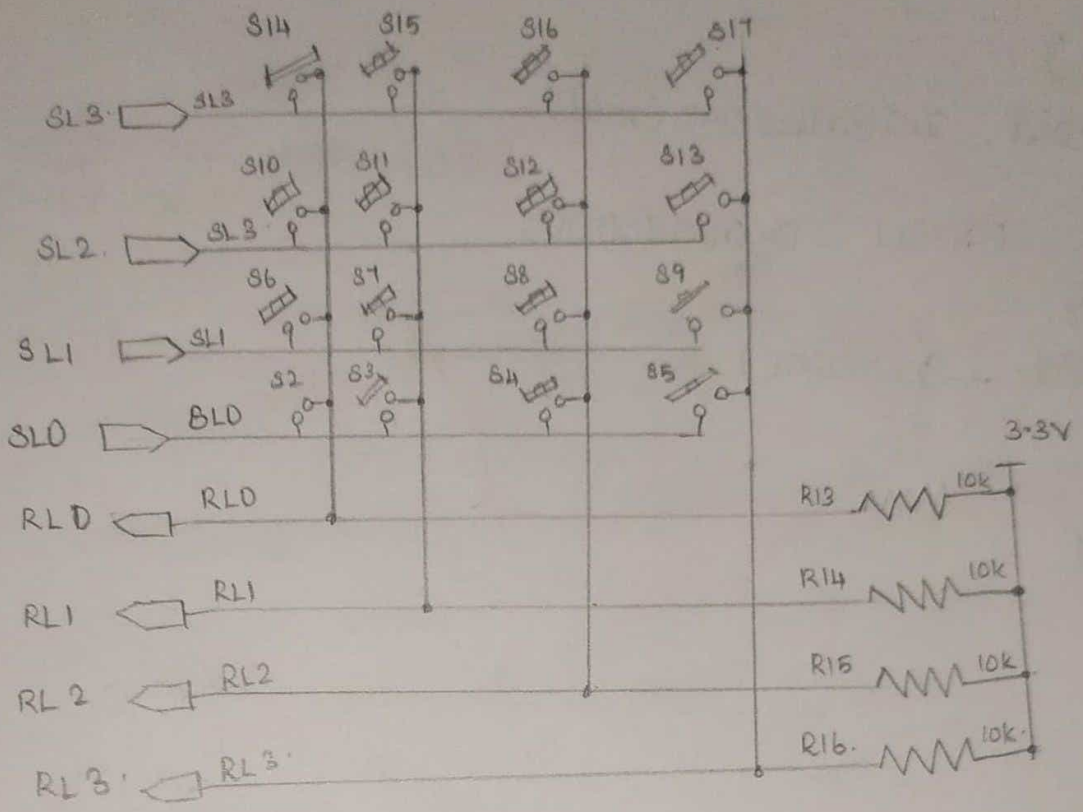
EX.NO:2

DAC

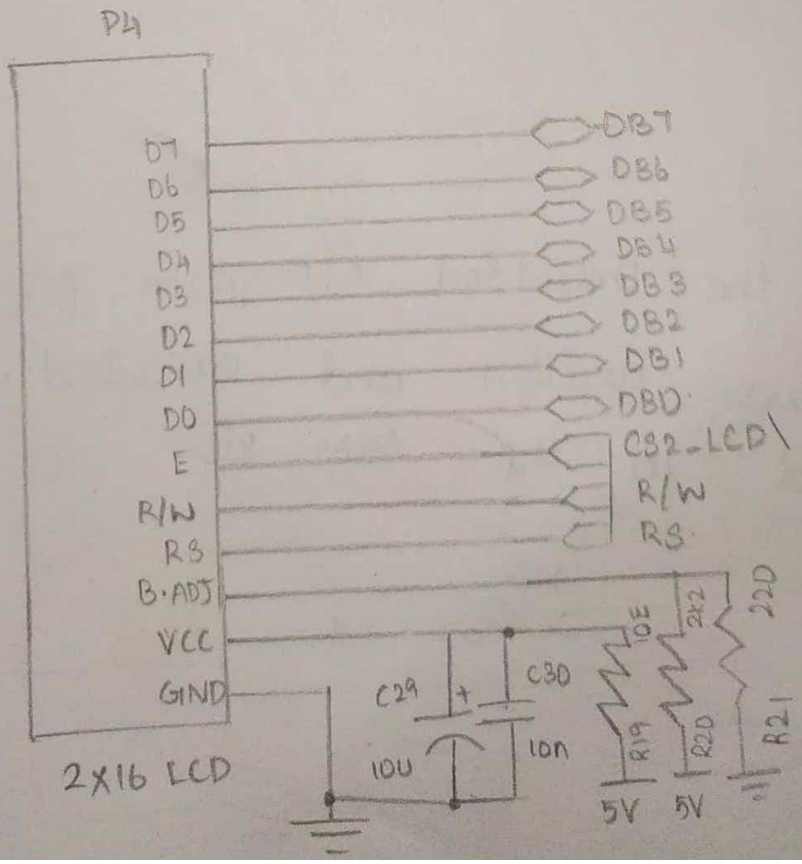

3.3V
100 n.
P0.19 / MAT1.2 / CAP1.2
P0.20 / MAT1.3 / SSEL1
P0.22 / AD1.7 / MAT0.0
3.3V
G2A
G2B
VCC
GND
74HC138
CS0 - LED
CS1 - SW
CS2 - LCD
CS3 - SM
CS4 - GLCD
CS5
CS6
CS7

Ex. NO:3

Keyboard



LCD

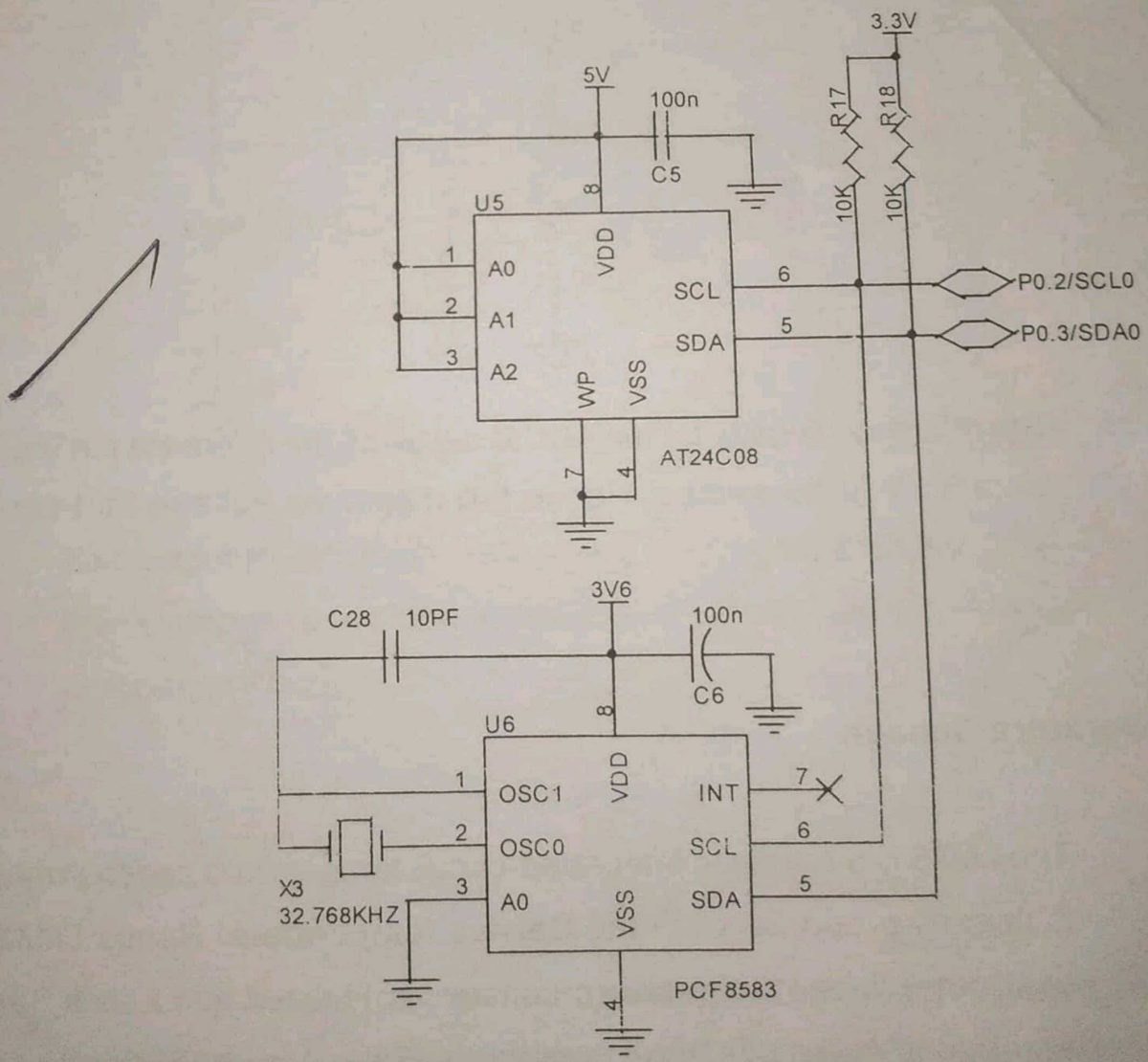


2.8. IIC RTC with battery backup and EEPROM

The IIC devices IIC RAM and IIC EEPROM are provided on board to study the I
interface. Both the devices are connected to same two wire bus, where the seve
segment LED driver (SAA 1064) is connected. IIC devices are connected to th
IIC peripheral of the controller. The clock line is connected to port line P0.4, whic
is the SCK line of the controller and the data line is connected to the portlin
P0.3 and it is the SDA line of the controller.

The RTC, PCF8583 used here is a most popular RTC device from Philips. Th
device has a Real Time Clock and 256 bytes of the RAM and battery backup
provided for this RAM. The address line, A0 of PCF8583 is set to 0. The sla
address of the RTC is A0H.

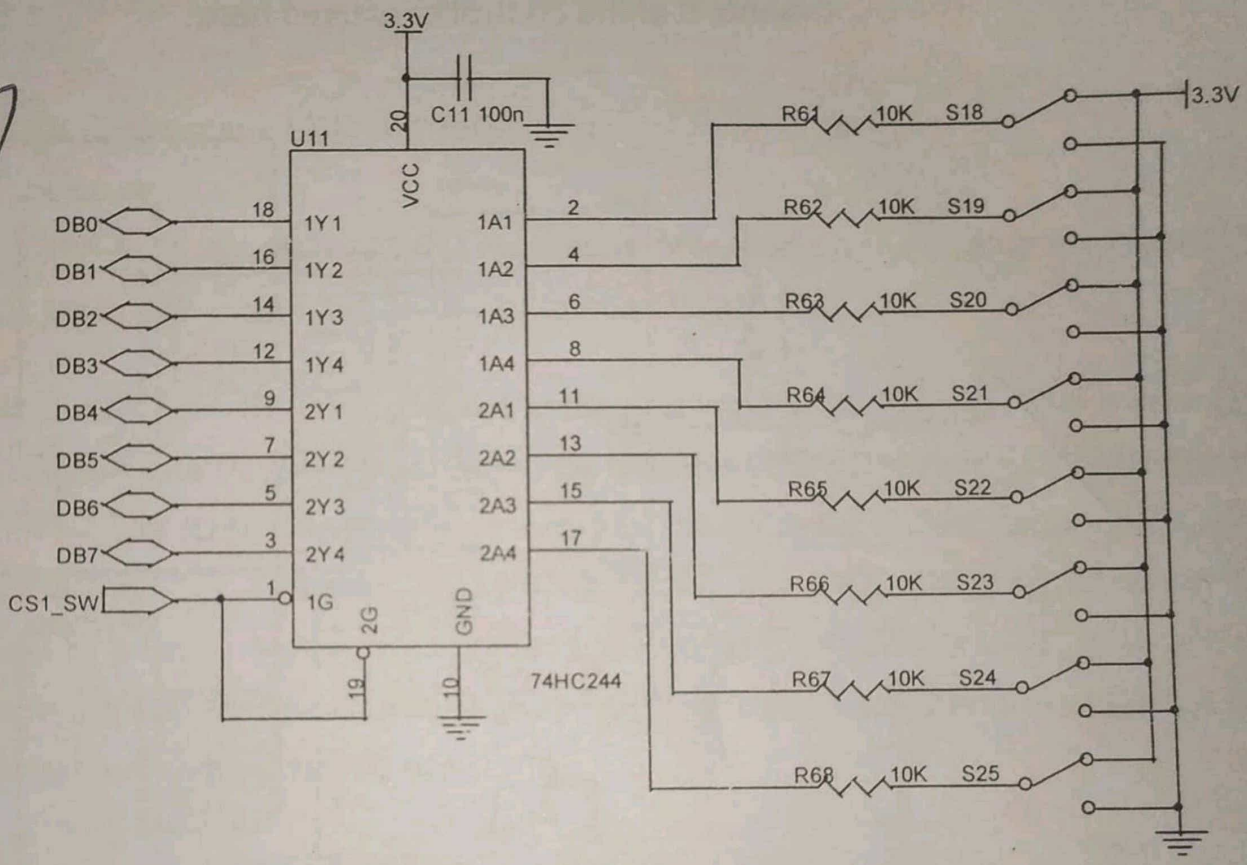
EXP NO 4 EEPROM



2.3. Eight Numbers of Toggle Switches

EXP NO 5 TOGGLE SWITCH

To give fixed level signal to the port lines of the controller, 8 numbers of toggle switches are provided.



The toggle switches are interfaced to the microcontroller through the common data bus lines DB0 to DB7. Since common data bus lines DB0 - DB7 are used fo the interface, an 8-bit buffer 74HC244 is used to interface the switches with the data bus.

To read the toggle switches level, it necessary to set the address lines of the decoder properly. Clear port lines P0.20, P0.22 and set the portline P0.19 t generate the control signal to enable the buffer connected to the toggle switches

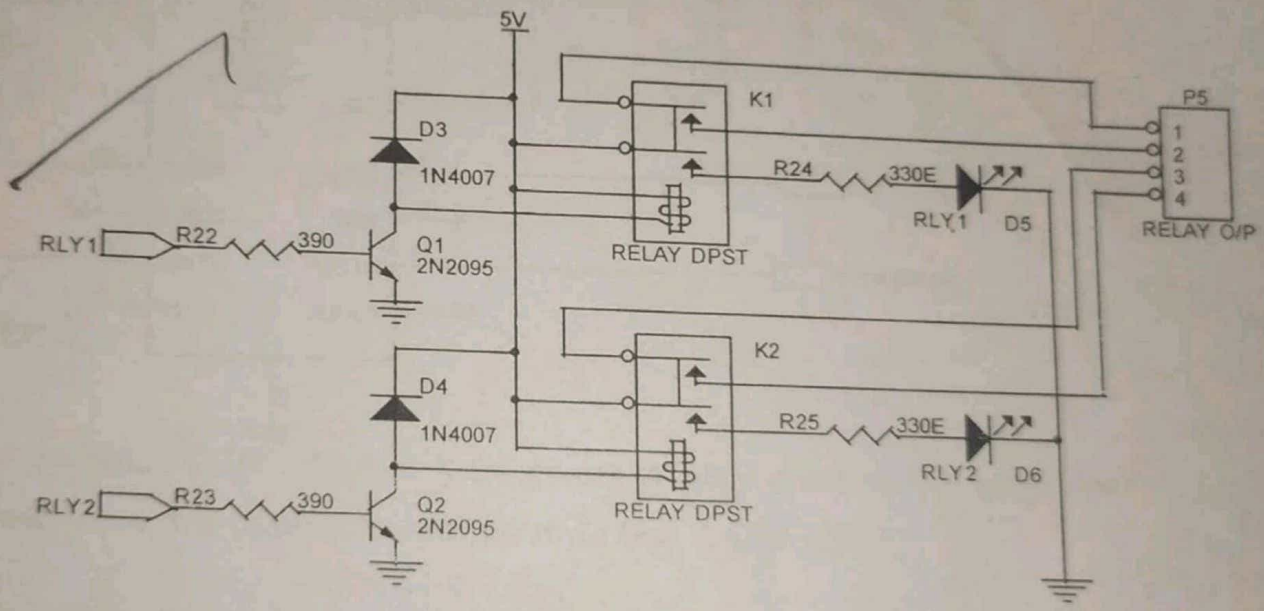
When the switch is open, it will give a high level through a 10K resistor. When th switch is closed it gives zero level.

2.12. 5V Relay.

EXP NO 5 RELAY

Two numbers of 5V relays are use in the board for experimental purpose. The relays are driven by the NPN transistors BC547. The port lines used for driving the relays are P0.30 and P0.31.

A one level through the port line will energize the relay coil.

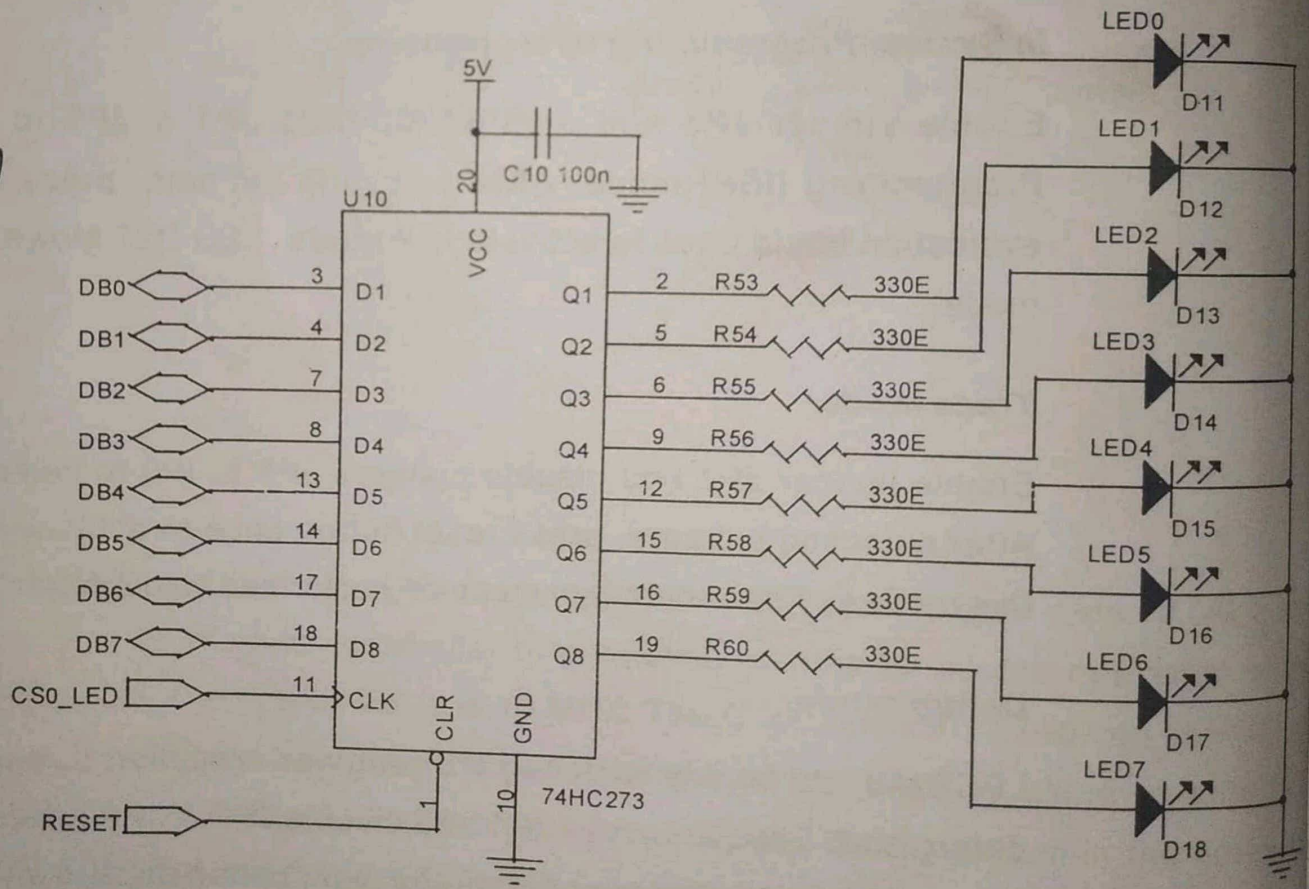


2.2. Eight numbers of Point LEDs

8 numbers of point LEDs are interfaced to the microcontroller through the common data bus lines DB0 to DB7. Since common data bus lines DB0 - DB7 are used for the interface, an 8-bit latch 74HC273 is used to drive the LEDs.

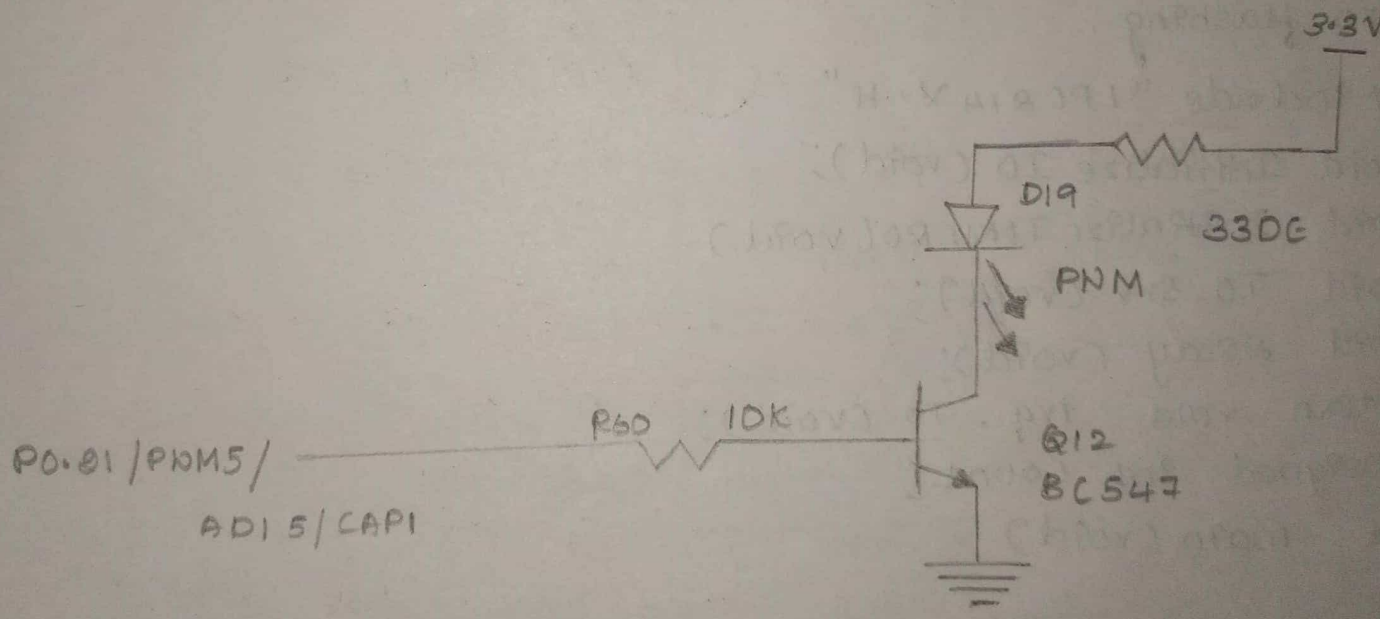
To activate an LED send a '1' level through the bus line to which the LED is connected. To switch off an LED send '0' level through the bus line. After giving proper signal to the data lines, the address lines of the decoder is set to select the latch connected to the LEDs. Clear all port lines P0.19, P0.20 and P0.22 to generate the control signal for the latch.

EXP NO 6 LED



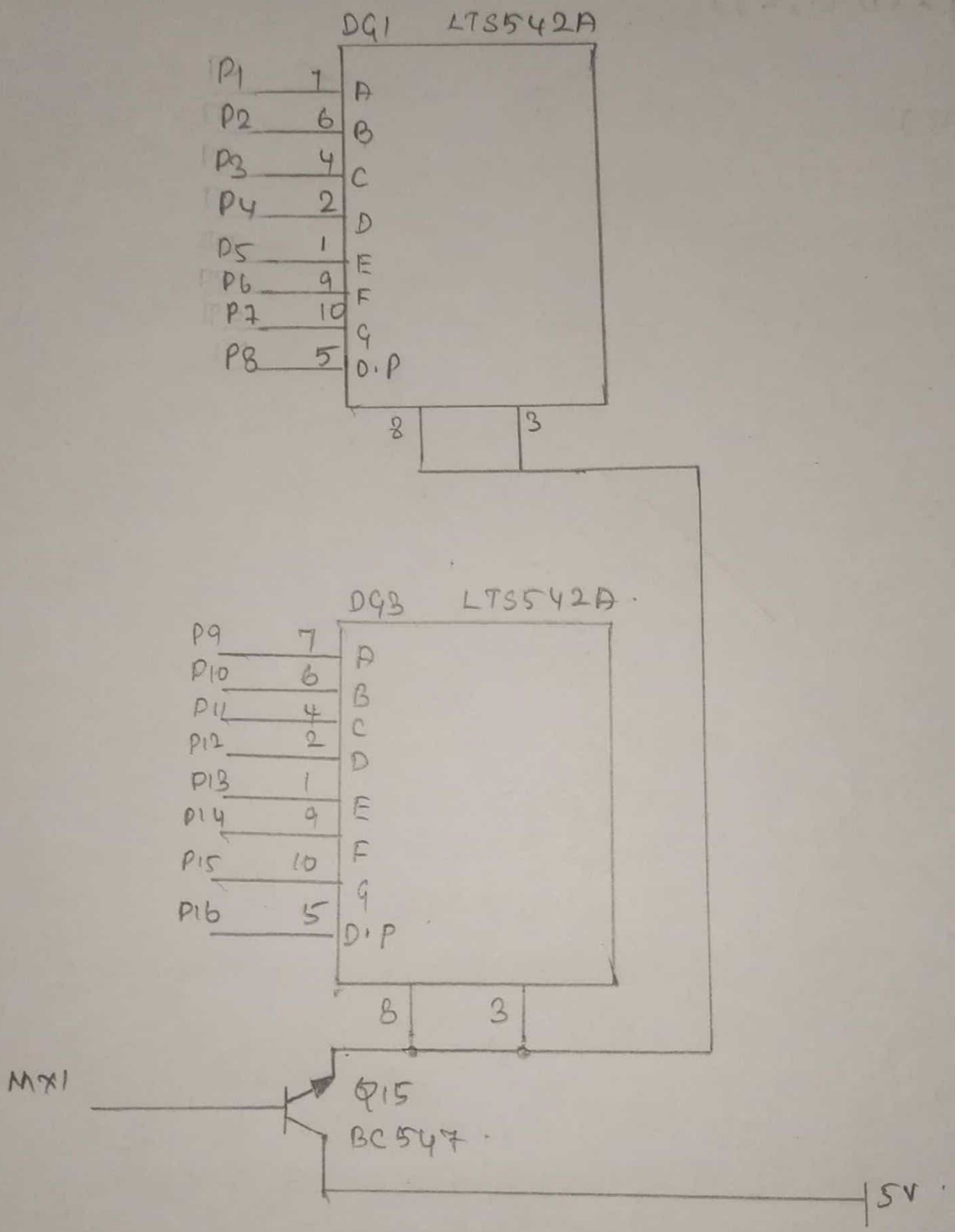
EX:NO:6

PWM

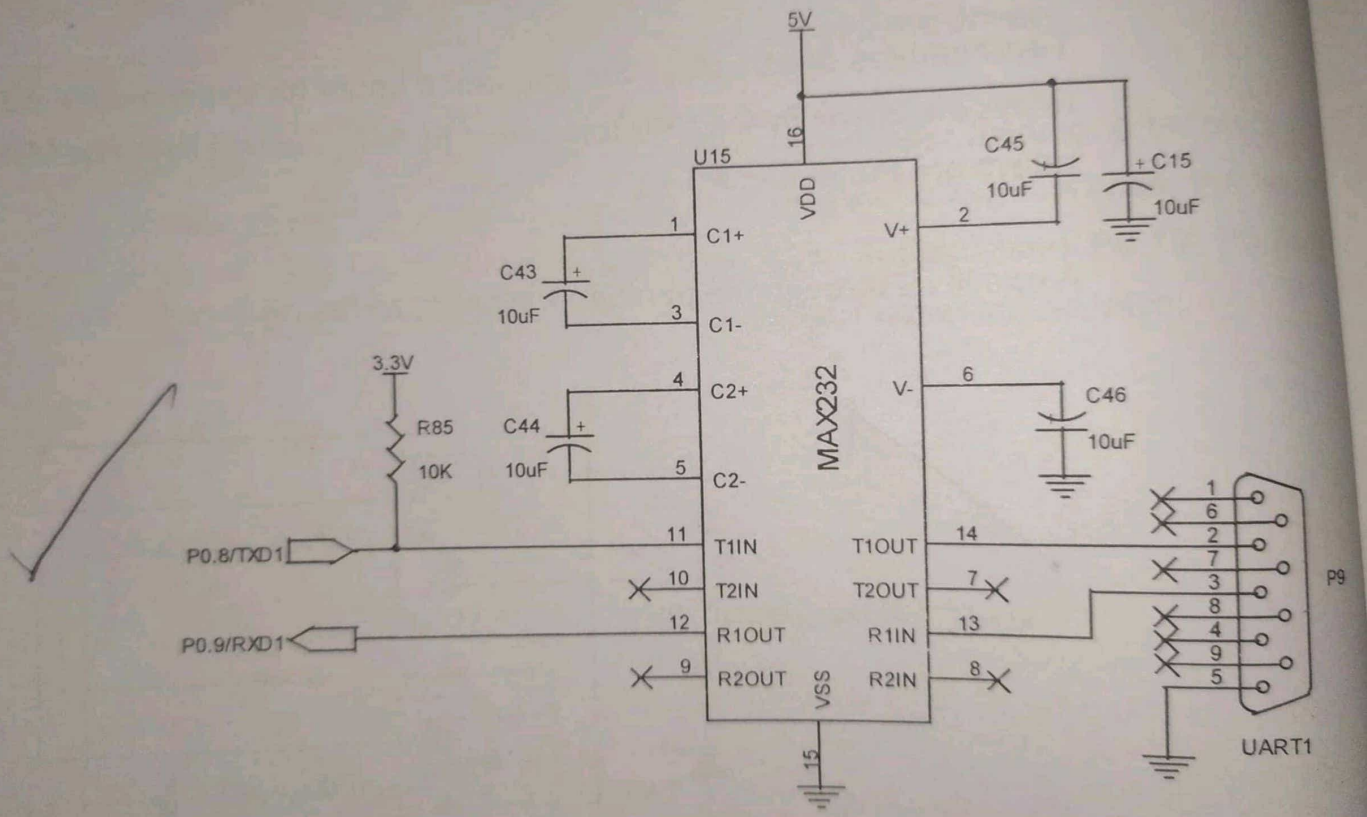


Exp. No: 7

SEVEN SEGMENT LED

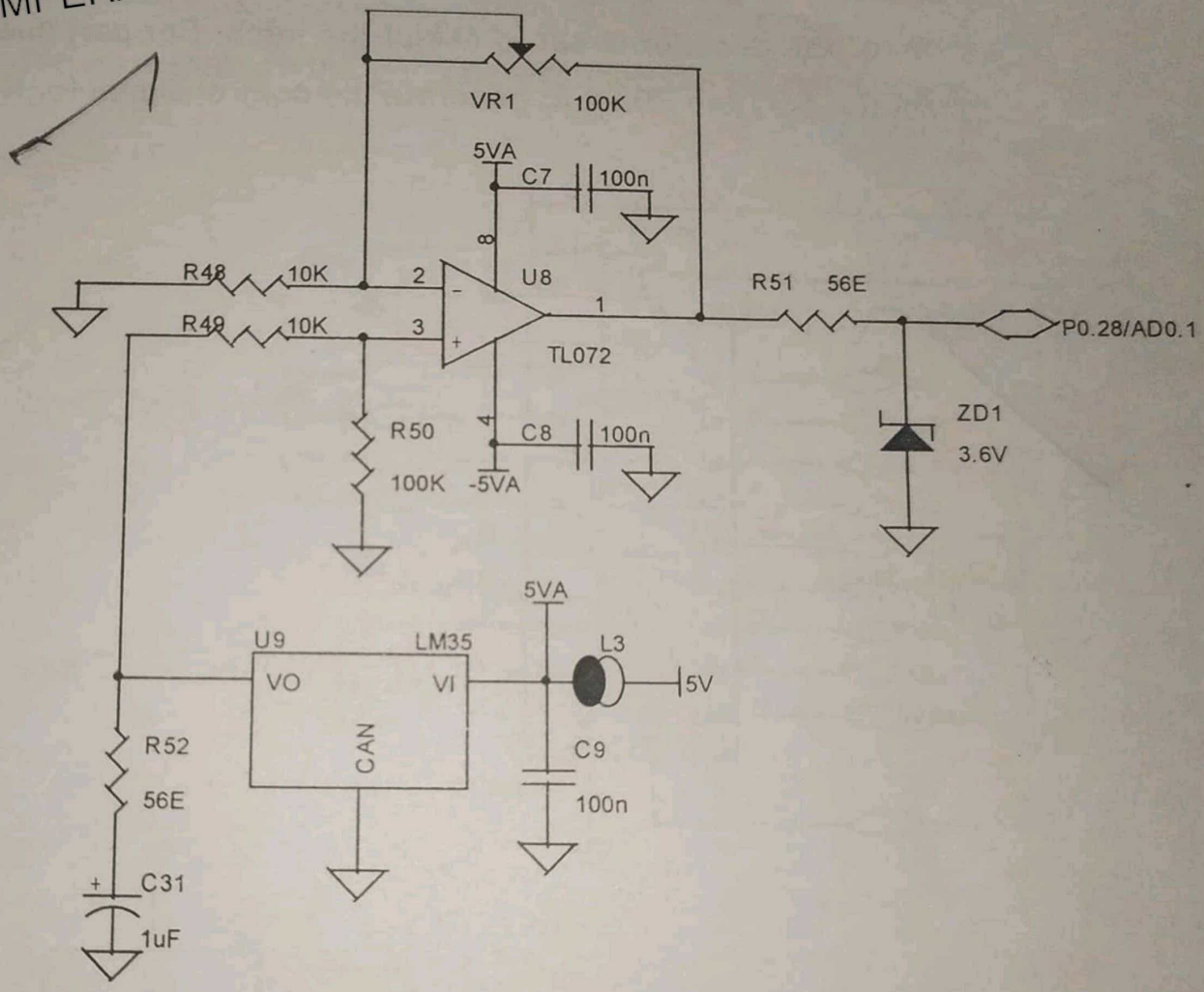


EXP NO 8 SERIAL PORT



The sensor gives an output voltage of 10mvolts / degree centigrade. The rang
temperature is from -55 C to +150 C. Room temperature can be measured u
this sensor. At room temperature of 30 C, the voltage output will be 300mv.

EXP NO 9 TEMPERATURE SENSOR

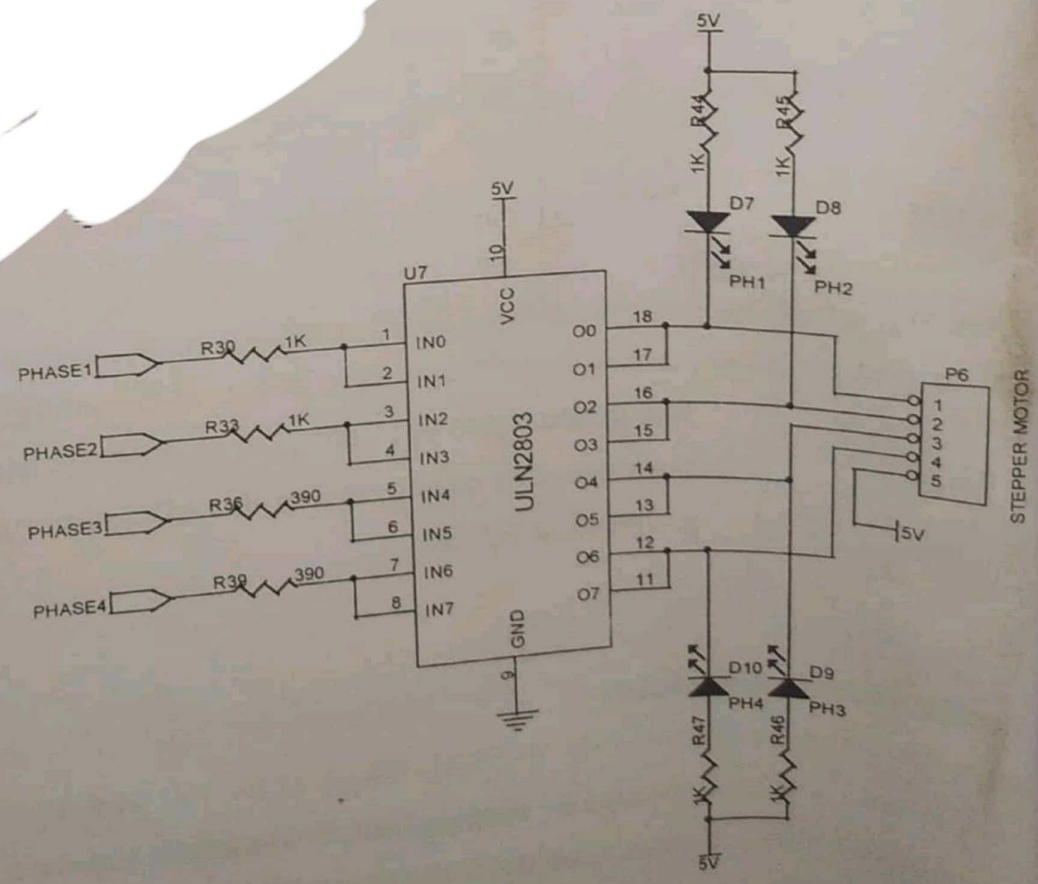


The output from the sensor is passed through an opamp LM324. The voltag
the opamp is connected to the ADC channel ADC0.1. The port line used
purpose is P0.28.

2.11. Stepper Motor

clear the port line P0.22 to g...

EXP NO 9 STEPER MOTOR



2.2. Eight numbers of Point LEDs

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EXP NO 10 FLASHING OF TWO LED