

**DC Lab session-2**

- When coming to the lab, bring a small notebook for noting down the practical results.

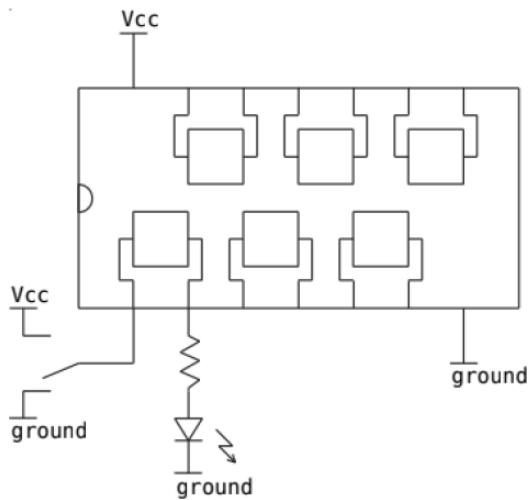
**Aim:** To introduce the following (i) A digital test kit (ii) Three integrated circuits (iii) Power supply

**Power supply** that shall be used is 5V direct current (DC) power supply, the positive pole of the power supply shall be represented by the term Vcc and the negative pole of the power supply shall be represented by the term ground.

In regard to the digital test kit, try to get (i) to know the kit (ii) to power the kit (iii) to verify whether all light emitting diodes (LED) are working or not. (iv) to verify whether all switches are working or not.

**Part-1:**

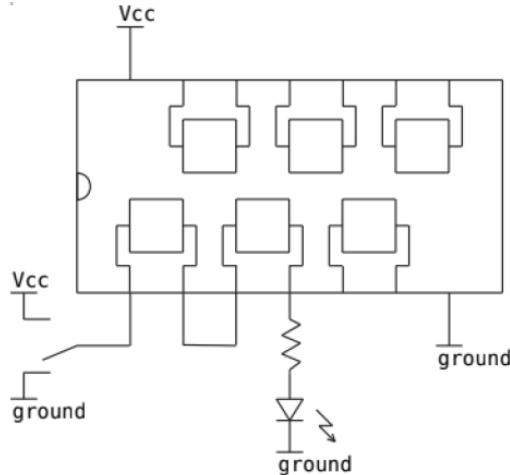
Use the integrated circuit named 74LS04 (or simply 7404)



**Fig.1: Integrated Circuit (IC) 74LS04**

Make the circuit as shown in Fig.1 and identify the state of the light emitting diode (LED) with respect to the position of the switch (connect the switch either to Vcc or Ground).

**Part-2:** Make the circuit as shown in Fig.2 and identify the state of the light emitting diode (LED) with respect to the position of the switch (connect the switch either to Vcc or Ground).

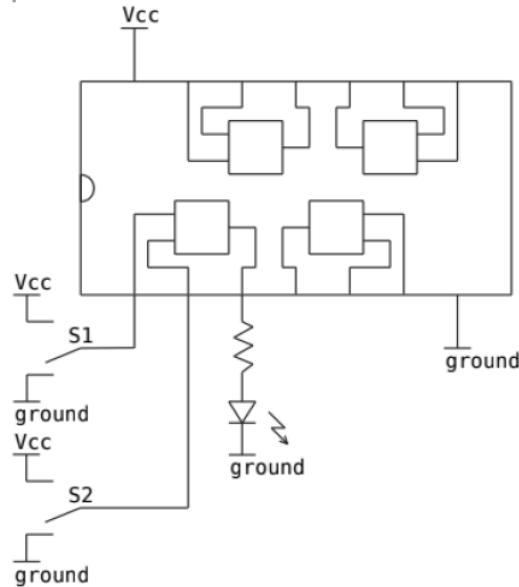


**Fig.2: Integrated Circuit (IC) 74LS04**

## **Part-3:**

Refer to the circuit connection in Fig.2, and measure the current which flows through the positive pole of the circuit with respect to the state (position) of the switch.

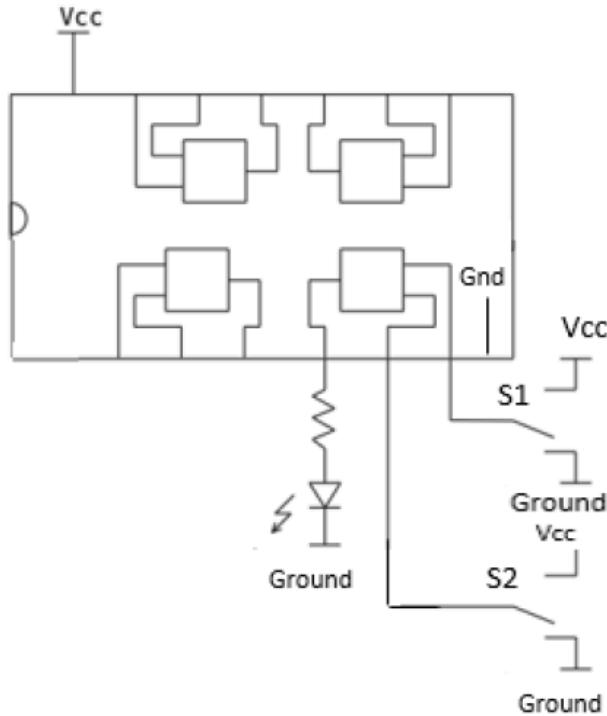
**Part-4:** Use the integrated circuit named HCF4081BE (or simply 4081).



**Fig.3: Integrated Circuit (IC) HCF4081BE**

Refer to the circuit connection in Fig.3 and identify the state of the Light emitting diode(LED) with respect to the states (positions) of the two switches (S1 and S2).

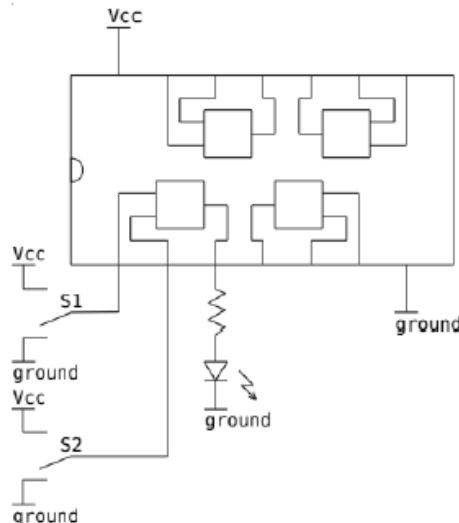
## **Part-5:**



**Fig.4: Integrated Circuit (IC) HCF4081BE**

Refer to the circuit connection shown in Fig.4 and write down the state of the light emitting diode (LED) with respect to the states (positions) of the two switches (S1 and S2).

**Part-6:** Use the integrated circuit (IC) named CD4071.



**Fig.5: Integrated Circuit (IC) CD4071**

Refer to the circuit connection in Fig.5, and write down the state of the light emitting diode (LED) with respect to the states (positions) of the two switches (S1 and S2).