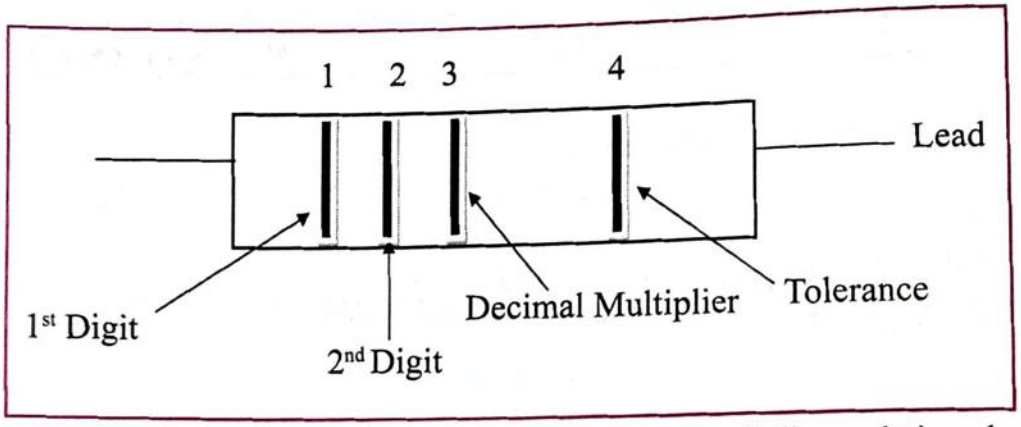
ACTIVITY NO. 7
STUDY OF RESISTORS USING COLOR CODE

Aim : To learn how to calculate the value of resistor with help of colour code.
Apparatus : 5 Resistors of different values, multimeter.
Diagram :



Generally, standard value carbon resistors are colour coded to indicate their value. From left to right, the first band gives the first digit, the second band gives the second digit, the third band gives the decimal multiple [no. of zero's after first two digits] . The fourth band gives the tolerance of the resistor in percentage. In some cases there is no fourth band.In this case resistor should be hold in such a way that the gap on the left side is smaller.

Procedure:

1. Calculate the value of the first resistor alongwith its tolerance using the colour code marked on the resistor. The values of colour code are given in the table below.
2. Take a multimeter and adjust it to the suitable resistance range. Measure the value of the first resistor using the multimeter.
3. Repeat the same procedure for 4 other resistors.

Resistor colour code chart :

Colour	Digit	Multiplier	Tolerance
Black	0	10^0	--
Brown	1	10^1	± 1 %
Red	2	10^2	± 2 %
Orange	3	10^3	--
Yellow	4	10^4	--
Green	5	10^5	--
Blue	6	10^6	--
Violet	7	10^7	--
Grey	8	10^8	--
White	9	10^9	--
Golden	--	10^{-1}	± 5 %
Silver	--	10^{-2}	± 10 %
No Colour	--	--	± 20 %

Observation table :

Sr. No.	Colour code on Resistor	Band -I	Band -II	Band -III	Band -IV	Value Ω	Tolerance Ω	Calculated value of Resistor with tolerance in Ω	Reading on multimeter in Ω
1	BBS	Red	Violet	brown	gold	2x101	1·5'/·	270 Ω +5%	
2	RRGG	Black	Blue	orange	silver	6x103	±10'/·	6kΩ + 10%.	
3	BGRG	yellow	violet	organe	Green	47x10³	±5'/·	47Ω +5'/·	
4	BGGG	white	grey	green	yellow	48x10⁵	±20'/·	9800kΩ20%.	
5	BGRR	Black	blue	brown	silver	6x10⁷	±10'/·	00Ω± 20%	

Result :

We study the method of finding the value of resistor from colour code and verify the value using a multimeter.

Precautions :

Use multimeter with proper range for measuring resistance.

FOR NOTES

* Take are measur percentage are up resistance)

* Temperature coefficient to color In unitary equipment extra resistance resistor of degree celcius of temperature change.

* Explosion to colour & Brown 1%, orange 0.01%, yellow 0.001% resistor having only single range called as Zero which resistance it is used as universe to connect traces are as board.

Remark and sign of teacher: .....