

Brac University
Department of Electrical & Electronic Engineering
Fall 2025

EEE205L

ELECTRONIC CIRCUITS I LABORATORY

Section: 01



Lab Report

Experiment no. 05

Name of the experiment: BJT Characteristics

Prepared by:

Name: Muhammad Mushfiqur Rahman ID: 24121058

Group Number: 01

Other Group members:

Sl.	ID	Name
1.	24121076	Tashin Ahmed Sakib
2.	24121308	Alif Tamjid
3.	24121205	Souvik Bamran Ratul
4.	24121204	Abir Chowdhury Ratul

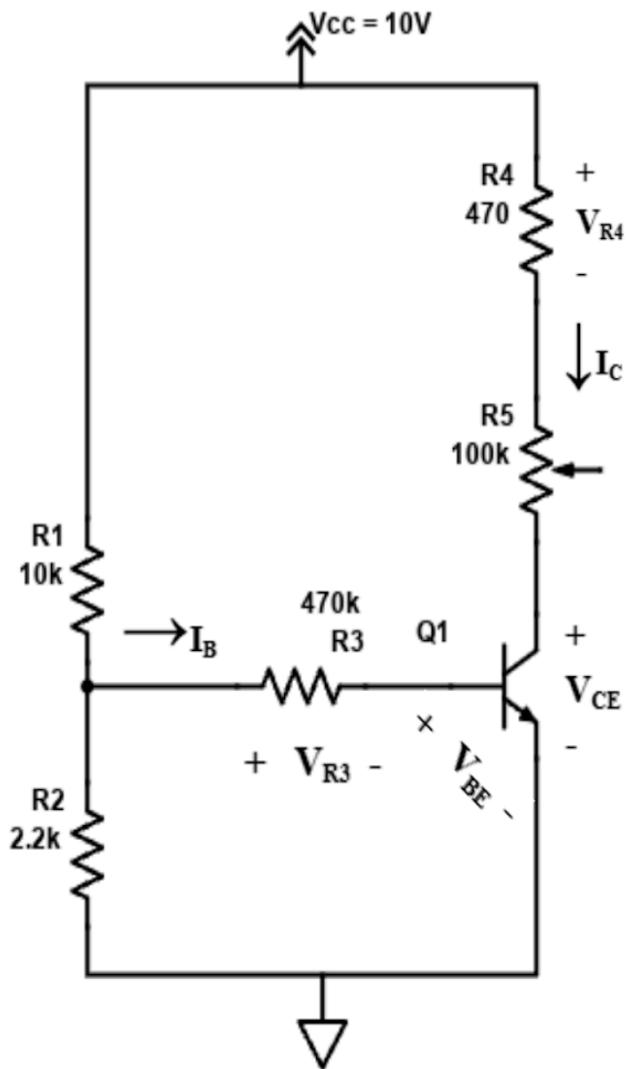
Objective

Measure and plot the collector characteristic curves of a BJT and study the BJT datasheet to become familiar with its specifications.

Equipments

1. Breadboard
2. Jumper Wires
3. DC voltage Source
4. $470\text{k}\Omega$, $10\text{k}\Omega$, $2.2\text{k}\Omega$, 470Ω Resistors
5. $100\text{k}\Omega$ Potentiometer
6. Multimeter
7. Transistor (C828)

Circuit



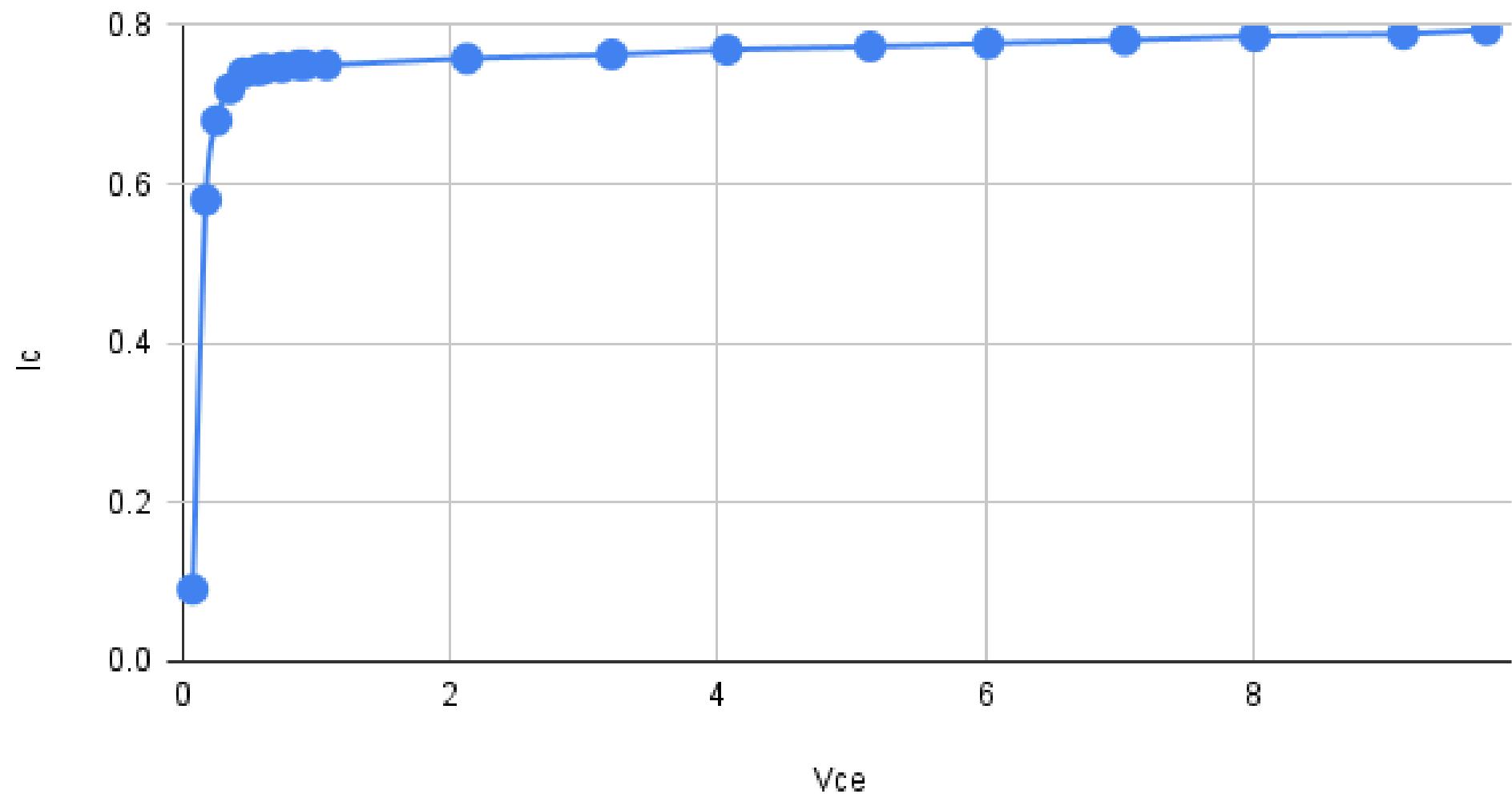
Data

R_3	V_{R3}	I_B
471	1.19	2.526

R_4	V_{CE}	V_{R4}	I_C
495	0.081	45.045	0.091
495	0.179	287	0.58
495	0.26	337	0.68
495	0.358	356	0.72
495	0.46	366	0.74
495	0.57	368	0.743
495	0.617	369	0.745
495	0.748	370	0.747
495	0.875	371	0.75
495	0.922	371	0.75
495	1.08	372	0.75
495	2.13	375	0.758
495	3.21	378	0.763
495	4.07	381	0.769
495	5.14	383	0.773
495	6.02	385	0.777
495	7.04	387	0.781
495	8.01	389	0.786
495	9.12	391	0.789
495	9.74	393	0.794

Graph

I_C vs. V_{CE}



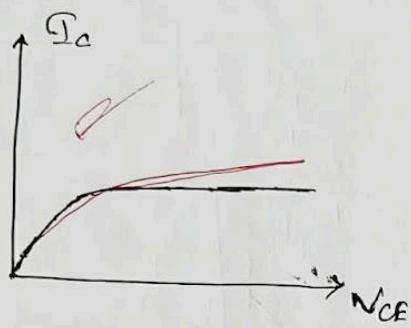
Appendix

Experiment 5: BJT Characteristics.			Group 1	
Circuits:				
R_3	V_{R_3} (V)	$I_D = \frac{V_{R_3}}{R_3}$ (mA)		
172	1.22	0.386		
471	1.19	2.524	5.85	

$V_{CE} \rightarrow 0V - 1V @ 0.1V$
 ~~$1V - 20V @ 1V$~~

$R_y (\Omega)$	V_{CE} (V)	V_{Ry} (mV)	$I_C = \frac{V_{Ry}}{R_y}$ (mA)
495	0.081 0.179,9 0.260 0.358 0.460	47.5 329 317 379 360	0.096 0.665 0.762 0.766
1.	0.081 0.179 0.260 0.358 0.460 0.570 0.617 0.748 0.875 0.922	45.045 287 337 356 366 368 369 370 371 371	0.091 0.091 0.58 0.58 0.68 0.68 0.720 0.740 0.743 0.7845 0.7847 0.750 0.750
	1.080 2.130 3.210 4.07 5.14 6.02 7.04 8.01 9.12 19.74	372 375 378 381 383 385 387 389 391 393	0.750 0.758 0.763 0.769 0.773 0.777 0.781 0.786 0.789 0.794

Geraph:



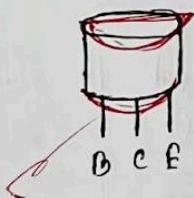
Check:

1. $V_{BE} \rightarrow 0.5\text{ V} - 0.7\text{ V}$.

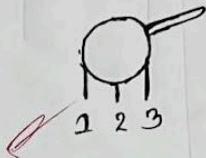
2. Gradual Change in V_{CE}

Terminal Configuration

1. PNP \rightarrow C828.



2. Potentiometer.



1 and 2 \rightarrow Clockwise ↑
Counter clockwise ↓

Incomplete



Ans

2025-December-4