

**Brac University**  
**Department of Electrical & Electronic Engineering**  
**Fall 2025**

**EEE205L**

**ELECTRONIC CIRCUITS I LABORATORY**

**Section: 01**



# Lab Report

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**Experiment no. 05**

**Name of the experiment: BJT Characteristics**

*Prepared by:*

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***Group Number: 01***

***Other Group members:***

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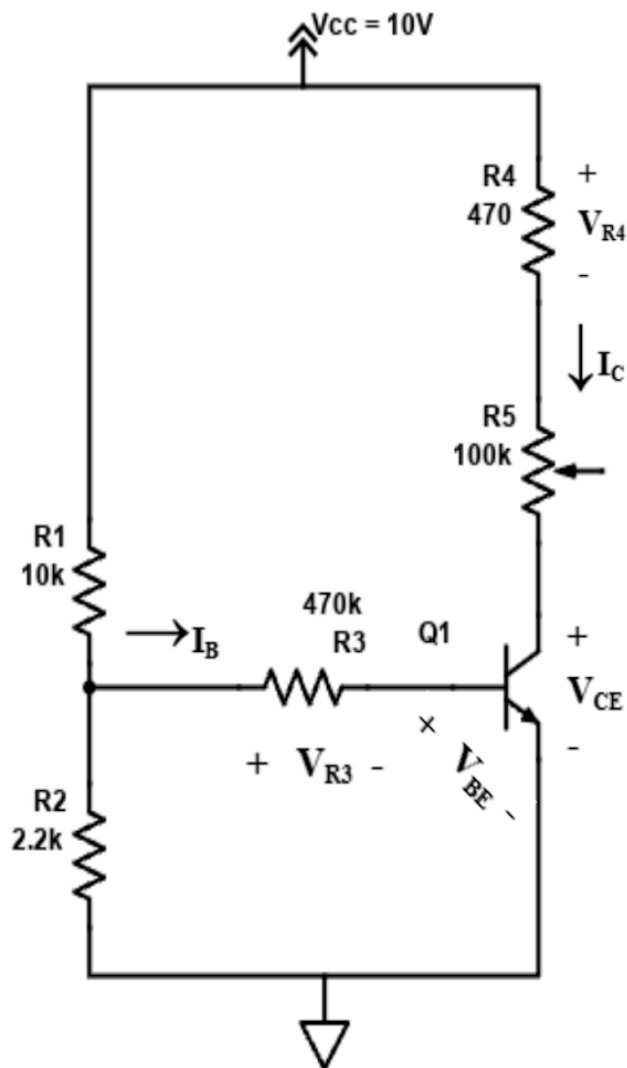
## Objective

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.  $470\text{k}\Omega$ ,  $10\text{k}\Omega$ ,  $2.2\text{k}\Omega$ ,  $470\Omega$  Resistors
5.  $100\text{k}\Omega$  Potentiometer
6. Multimeter
7. Transistor (C828)

## Circuit



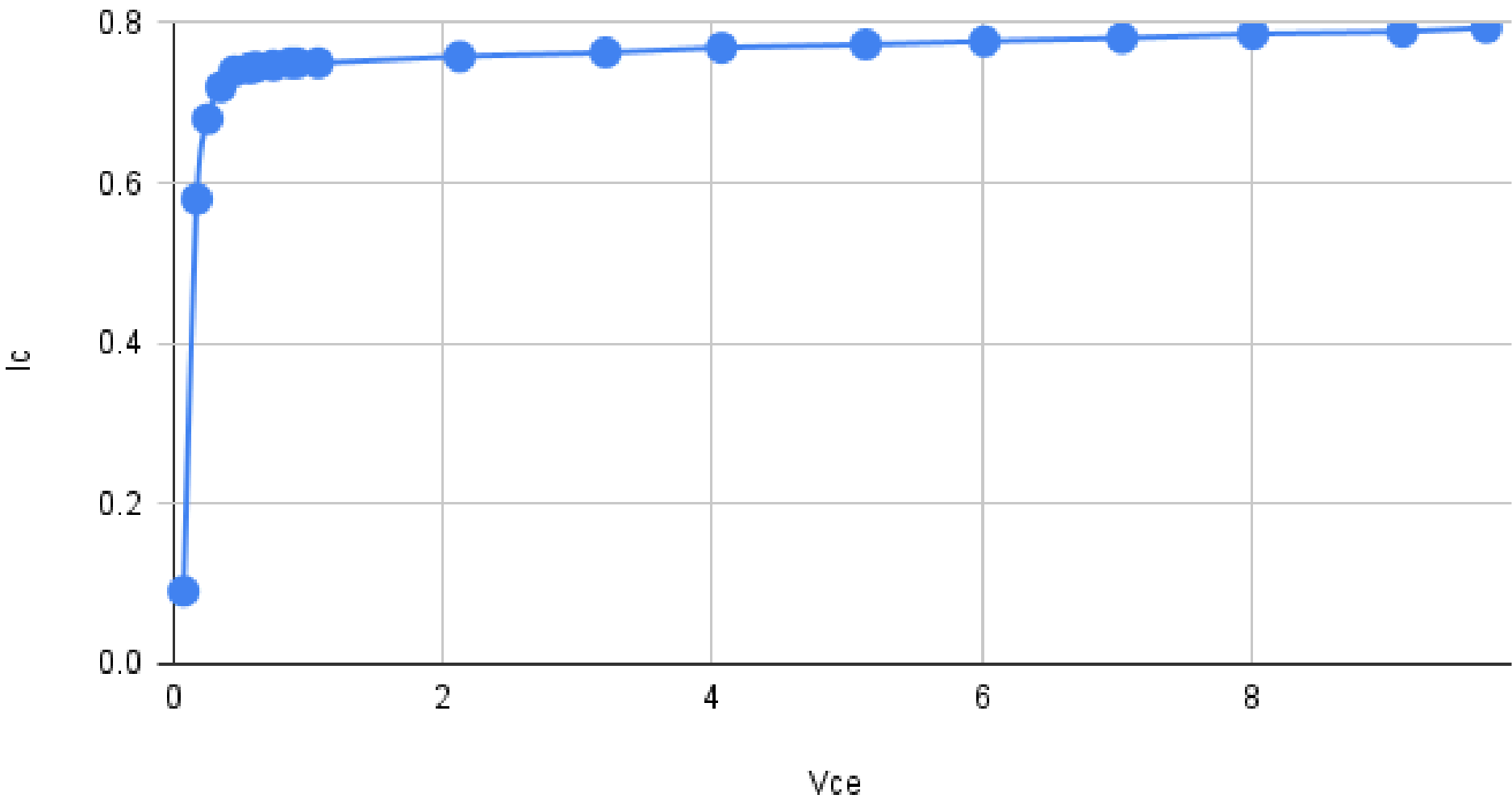
## Data

$R_3$	$V_{R3}$	$I_B$
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

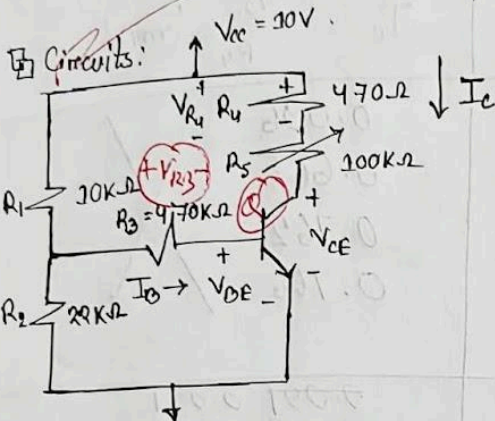
Graph

$I_c$  vs.  $V_{ce}$



# Appendix

## Experiment 5: BJT Characteristics.



Group 1

## Data:

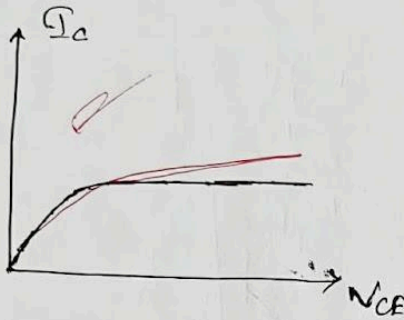
$R_5$  at the middle  $V_{ce}$  position,

$R_3$ (k $\Omega$ )	$V_{R_3}$ (V)	$I_b = \frac{V_{R_3}}{R_3}$ ( $\mu A$ )
472	<del>1.22</del> 1.22	<del>0.386</del>
471	1.19	<del>2.52</del> 2.545

$V_{CE} \rightarrow 0V - 1V$  @  $0.1V$  .  
 $1V - 10V$  @  $1V$  .

$R_4$ (Ω)	$V_{CE}$ (V)	$V_{R_4}$ (mV)	$I_C = \frac{V_{R_4}}{R_4}$ (mA)
495	0.081 0.179, 9 0.260 0.358 0.460	47.5 329 317 379	0.096 0.665 0.762 0.766
0.	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	<del>0.091</del> 0.091 <del>0.58</del> 0.58 <del>0.68</del> 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

Graph:



Check:

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

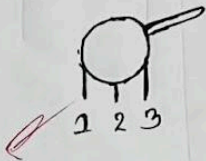
2. Gradual Change in  $V_{CE}$

Terminal Configuration

1. PNP  $\rightarrow$  C828.



2. Potentiometer.



1 and 2  $\rightarrow$  Clockwise  $\uparrow$   
Counter clockwise  $\downarrow$

Incomplete

$\frac{8}{10}$

Pro

2015-December-4