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| **EXPERIMENT**  **NUMBER 5** | **GROUP 10** | Trần Minh Quân-19151078 |
| Investigate the characteristics of diodes and transistors | **DATE** | 22/04/2022 |
| **LECTURER** | Tạ Đình Hiến |
| **REPORT DATE** |  |
| **GRADING** |  |

**Purpose:**

* About knowledge: State the measurement method and the steps to conduct the experiment
* Test to determine the characteristics of Diode and Transistor.
* About skills: Fluently use measuring tools, follow the correct procedure
* Experiment yourself to get accurate data.
* Attitude: Careful, persistent, accurate, honest, objective.

1. **Measuring Instruments**

Experimental equipment includes:

- Physics experiment kit BKE-050 or MC-95.7

- Diode (silicon) and transistor (npn)

- 820Ω and 100kΩ resistors

- Set of wiring harnesses (7 wires)

- Power supply 220VAC

1. **Draw the Volt-Ampere characteristic curve of the diode**
2. Data Table 1

- Accuracy level of voltmeter: =

- Voltmeter scale: =

- The smallest division of the voltmeter scale: =

- Accuracy class of Ampere meter: =

- Ampere meter scale: =

- The smallest division of the Ampere meter scale:=

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| U (V) |  |  |  |  |  |  |  |  |  |  |  |
| I (mA) |  |  |  |  |  |  |  |  |  |  |  |

1. Draw the characteristic I = f (U) of the semiconductor diode

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| U (V) |  |  |  |  |  |  |  |  |  |  |  |
| I (mA) |  |  |  |  |  |  |  |  |  |  |  |

1. **Draw characteristic curve = f(,) of transistor**
2. Data table 2

- Accuracy level of voltmeter: =

- Voltmeter scale: =

- The smallest division of the voltmeter scale: =

- Accuracy class of Ampere meter 1: =

- Ampere meter scale 1: =

- The smallest division of the Ampere meter scale 1:=

- Accuracy class of Ampere meter 2: =

- Ampere meter scale 2: =

- The smallest division of the Ampere meter scale 2:=







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| IB = µA | UCE (V) |  |  |  |  |  |  |  |  |  |  |
| IC (mA) |  |  |  |  |  |  |  |  |  |  |
| IB = µA | UCE (V) |  |  |  |  |  |  |  |  |  |  |
| IC (mA) |  |  |  |  |  |  |  |  |  |  |
| IB = µA | UCE (V) |  |  |  |  |  |  |  |  |  |  |
| IC (mA) |  |  |  |  |  |  |  |  |  |  |
| IB = µA | UCE (V) |  |  |  |  |  |  |  |  |  |  |
| IC (mA) |  |  |  |  |  |  |  |  |  |  |

1. Graph = f () and = f () on the same coordinate system

1. From the graph, determine the current gain of the transistor:



1. Calculate the errors of 

- Write measurement results β = β ± ∆β:

- Comment on measurement results: