******

***THE HASHMITE UNIVERSITY***

***ELECTRICAL ENGINEERING DEPARTMENT***

***ELECTRICAL MACHINES LAP***

*Lab Sheet*

**DC-Shunt Excited Generator**

|  |  |
| --- | --- |
| **Group number: Students ID:** | |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |

**DC-Shunt Excited Generator**

**The no-load characteristic**

Table (6-7)

Table (6-8)

|  |  |  |  |
| --- | --- | --- | --- |
| 1400rpm | | | |
| Increasing | | Decreasing | |
| (V) | (A) | (V) | (A) |
|  | 0 |  | 0 |
|  | 0.1 |  | 0.1 |
|  | 0.2 |  | 0.2 |
|  | 0.3 |  | 0.3 |
|  | 0.4 |  | 0.4 |
|  | 0.5 |  | 0.5 |
|  | 0.6 |  | 0.6 |
|  | 0.7 |  | 0.7 |

|  |  |  |  |
| --- | --- | --- | --- |
| 1200rpm | | | |
| Increasing | | Decreasing | |
| (V) | (A) | (V) | (A) |
|  | 0 |  | 0 |
|  | 0.1 |  | 0.1 |
|  | 0.2 |  | 0.2 |
|  | 0.3 |  | 0.3 |
|  | 0.4 |  | 0.4 |
|  | 0.5 |  | 0.5 |
|  | 0.6 |  | 0.6 |
|  | 0.7 |  | 0.7 |

1. Draw the no load characteristic for increasing and decreasing on (x) axis at 1400 and 1200 rpm on the same graph?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

1. Why does the no load characteristic differ for increasing and decreasing excitation current?

…………………………………………………………………………

…………………………………………………………………………

…………………………………………………………………………

**The load characteristic**

Table (6-9)

|  |  |  |  |
| --- | --- | --- | --- |
| **If** (A) | **RPM** | **Il** (A) | **Vt**(V) |
| 0.8 | 1400 | 0 |  |
|  | 1400 | 2 |  |
|  | 1400 | 4 |  |
|  | 1400 | 6 |  |

1. Draw the external voltagecharacteristic separately and shunt excitation in the same diagram with on (x) axis?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

1. Why does **** decrease more with shunt than with separately excitation?

…………………………………………………………………………

…………………………………………………………………………

…………………………………………………………………………

1. Why does the generator not take up voltage in measurement if the field is wrongly connected?

…………………………………………………………………………

…………………………………………………………………………

…………………………………………………………………………

**Conclusions:**

…………………………………………………………………………

…………………………………………………………………………

…………………………………………………………………………

…………………………………………………………………………

…………………………………………………………………………

……………………………………………………………………………………………………………………………………………………