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***THE HASHMITE UNIVERSITY***

***ELECTRICAL ENGINEERING DEPARTMENT***

***ELECTRICAL MACHINES LAP***

*Lab Sheet*

**Induction Motor – II**

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

**Induction Motor - II**

**Measurement of efficiency characteristic and torque characteristic**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MEASURED VALUES** | | | | | **CALCULATED VALUES** | | | |
| **V**  **(v)** | **I1**  **(A)** | **T**  **(NM)** | **N**  **(r.p.m)** | **Pin**  **(w)** | **Poutput**  **(w)** | **(%)** | **cos** |  |
| **220V** |  | **0** |  |  |  |  |  |  |
| **220V** |  | **1** |  |  |  |  |  |  |
| **220V** |  | **2** |  |  |  |  |  |  |
| **220V** |  | **3** |  |  |  |  |  |  |
| **220V** |  | **4** |  |  |  |  |  |  |
| **220V** |  | **5** |  |  |  |  |  |  |
| **220V** |  | **6** |  |  |  |  |  |  |
| **220V** |  | **7** |  |  |  |  |  |  |

Table (9.3)

1. Draw the graphs (**** **= f(Pout**) for measurements at Table (9.3).
2. Draw the graphs **T** = f(**s**) for measurements at Table (9.3). Extrapolate the graphs to **T** = 0. What should be the slip for **T** = 0? Explain the difference.

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**Starting Current**

Table (9.4)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | "∆" Rated current ( )A | | | | | "Y" Rated current ( )A | | |
| **U(V)** |  |  |  |  |  |  |  |  |
| **I1(A)** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** |

**Questions:**

1. Using the results from table (9.4)*,* draw the graph I1= f (V), the starting current as a function of the stator voltage. The V axis must run to 220 V. Extend the curve and read the starting current at rated voltage,

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1. Calculate the ratio between starting current, for delta and star con­nection. What is the theoretical value? 





1. Calculate the percentage of no-load currant in relation to the rated current.



**Conclusions:**

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