Lab 7

Measurements

|  |  |  |
| --- | --- | --- |
| Component name | Expected value | Measured value |
| 15 mH inductor | 15mH | 14mH |
| 15 mH inductor internal resistance | Null | 31.2 Ω |
| Capacitor 33 nf | 33nf | 34.1 nf |
| Resistor 33 Ω | 33 Ω | 32.3 Ω |
| Resistor 1000 Ω | 1000 Ω | 984 Ω |

Process

Initial computer setup

Used mkrdir to make lab folder. Used mkdir to make lab photos folder. Used ii to make lab report file. Made a table in report to track part values. Made a table to track components name and measured value.

Measurement of parts

LCR meter was used to measure impedance elements. Tracked on paper for fast identification. Measurements recorded in table in lab report.

Construction of series resonant circuit on bread board

Measurement of input voltage

Measurement of series resonance circuit

Input voltage was higher than initial intended readjusted

|  |  |  |
| --- | --- | --- |
| Frequency (Khz) | VR3 | Phase |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| Fs |  |  |
| 7.5 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |

Something odd happened at resonance required a lot more input voltage.

Pre-lab:

Table 1:

|  |  |  |
| --- | --- | --- |
|  |  |  |
| A | Ꙍs | 44.947 \*103 rad |
| B | f | 7.1535 \*103 Hz |

Table 2:

|  |  |  |
| --- | --- | --- |
| C |  | 10.702 M |
| D |  | 66.845 mHz |
|  |  | 7.1535 KHZ |
|  |  | 7.1535 KHZ |

Table 3

Table 4

|  |  |  |
| --- | --- | --- |
| A |  | 17.408 krad |
| B |  |  |

Table 5

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