PEMERINTAH KOTA SEMARANG

DINAS PENDIDIKAN

**SMA NEGERI 14 SEMARANG**

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Nama Peserta : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Kelas/Program : XII IPA \_\_\_

No. Peserta : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hari/Tanggal : \_\_\_\_ / \_\_ Jan 2019

Waktu : 120 menit

Nilai :

Mata Pelajaran : Fisika

Materi Pokok : **Transformator**

Teknik Penilaian : Tes Praktik

Bentuk Instrumen : Tes Simulasi

Tahun Pelajaran : 2018/2019

**NASKAH SOAL UJIAN PRAKTIKUM**

**Rumusan Butir Soal :**

Lakukan simulasi percobaan Transformator untuk memahami prinsip kerja transformator dan menemukan hubungan perbandingan jumlah lilitan dengan perbandingan beda potensial pada transformator ideal.

1. Tujuan Percobaan

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1. Dasar Teori

Transformator adalah alat untuk mengubah tegangan listrik bolak balik. Alat ini bekerja berdasarkan prinsip perubahan induksi magnetik pada sebuah kumparan yang diinduksikan pada kumparan lain. Apabila terjadi perubahan medan magnet pada salah satu kumparan, maka perubahan medan magnet itu dapat menghasilkan ggl induksi pada kumparan yang lain. Untuk mendapatkan perubahan medan magnet pada kumparan transformator, arus masukan input harus berubah-ubah terhadap waktu atau merupakan arus bolak-balik.

1. Alat dan Bahan

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| No. | Nama Alat/Bahan | No. | Nama Alat/Bahan |
| 1.  2.  3.  4.  5. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 6.  7.  8.  9.  10. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Hipotesis

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1. Langkah Percobaan

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1. Data Hasil Percobaan

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| Tegangan Catu Daya | Np | Ns | Vp | Vs |  |  |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3 V | 500 | 1000 |  |  |  | **2**  **2**  **4** |
| 6 V | 500 | 1000 |  |  |  |  |
| 9 V | 1000 | 500 |  |  |  |  |
| 12 V | 1000 | 500 |  |  |  |  |

1. Evaluasi
2. Bagaimana pendapatmu mengenai hasil pada kolom 6 dan 7?

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1. Bagaimana perbandingan dan ? Jelaskan.

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1. Bagaimana prinsip kerja transformator? Jelaskan

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1. Sebuah transformator memiliki perbandingan jumlah lilitan kumparan primer dan sekunder 11 : 1. Bagian input trafo dihubungkan ke sumber tegangan listrik PLN sebesar 220 V dan arus output (sekunder) adalah 2,2 A.
2. Tentukan tegangan output trafo
3. Jika trafo dianggap ideal, berapa kuat arus inputnya?

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1. Kesimpulan Percobaan

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