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 : **Gerak Harmonis Pada Ayunan Bandul**

Teknik Penilaian : Tes Praktik

Bentuk Instrumen : Tes Simulasi

Tahun Pelajaran : 2018/2019

**NASKAH SOAL UJIAN PRAKTIKUM**

**Rumusan Butir Soal :**

Lakukan simulasi percobaan Gerak Harmonis Pada Ayunan Bandul untuk menyelidiki dan menemukan periode getaran pada ayunan bandul.

1. Tujuan Percobaan

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1. Dasar Teori

Benda dikatakan bergerak harmonis bila benda tersebut berayun melalui titik keseimbangan dan kembali lagi ke posisi awal. Gerak harmonis sederhana adalah gerak periodik dengan lintasan yang ditempuh selalu sama (tetap). Gerak harmonis sederhana mempunyai persamaan gerak dalam bentuk sinusoida dan digunakan untuk menganalisis suatu gerak periodik tertentu.

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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| --- | --- | --- | --- | --- | --- | --- |
| No- | Panjang Tali (ℓ) | Jumlah Ayunan (n) | Waktu (t) | Periode | T2 |  |
| 1 | 40 cm | 20 ayunan |  |  |  |  |
| 2 | 50 cm | 20 ayunan |  |  |  |  |
| 3 | 60 cm | 20 ayunan |  |  |  |  |
| 4 | 70 cm | 20 ayunan |  |  |  | **8**  **3**  **2** |
| 5 | 80 cm | 20 ayunan |  |  |  |  |
| 6 | 90 cm | 20 ayunan |  |  |  |  |
| 7 | 100 cm | 20 ayunan |  |  |  |  |
| 8 | 110 cm | 20 ayunan |  |  |  |  |
| Rata-rata | | | | | |  |

1. Evaluasi
2. Bagaimana pengaruh panjang tali terhadap periode ayunan?

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1. Dari data pengamatan, buatlah grafik hubungan antara T2 terhadap ℓ.

ℓ

T2

1. Berdasarkan grafik, bagaimanakah kecenderungan bentuk kurva yang diperoleh? Gambarkan garis yang paling cocok.

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1. Berdasarkan grafik, bagaimana hubungan antara T2 terhadap ℓ

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1. Tentukan besarnya nilai percepatan gravitasi bumi (g) dari data masing-masing percobaan. Apakah besar percepatan gravitasi bumi pada tiap percobaan sama? Jelaskan.

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1. Apabila massa anak timbangan diganti dengan massa yang lain, apakah akan berpengaruh dalam perhitungan percepatan gravitasi? Jelaskan. .

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1. Kesimpulan Percobaan

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Skor Total **= 27**