جدول زمني للتجارب المطروحة في مادة الفيزياء العملية -1 (1111)
الفصل الدراسي الأول 2010/2011

<table>
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<th>اسم التجربة</th>
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ملاحظة: ابتداء من التاريخ التالي يتم تنفيذ الشعوب بين القاعتين 221 و 225 كما هو مبين في الجدول. إذا أرجى من جميع الطلبة الانتظار بالقاعة ويتم استخدام المختبر.

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<th>رقم القاعة</th>
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<td>20</td>
<td>18.16.14.12.10.11.8.11.15.13.15.7.5.1.3.2.4</td>
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<td>21</td>
<td>17</td>
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<tr>
<th>اسم التجربة</th>
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<td>Specific Heat Capacity</td>
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<td>Vectors</td>
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<td>Rotational Motion</td>
<td>7</td>
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عيد الأضحى المبارك

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</tr>
</tbody>
</table>

*سيكون موعد الامتحان منتصف الفصل يوم الخميس المصادف 4/11/2010 الساعة 04:00 – 06:00
**سيكون موعد الامتحان النهائي يوم الأحد المصادف 26/12/2010 الساعة 03:00 – 06:00

ملحوظات هامة جدا:
- يتم شراء دليل المختبر من مركز بيع الكتب في مبنى عمادة البحث العلمي.
- على جميع الطلاب احترام كل ما يلزمهم من قوانين الأماكن، والتي تتضمن الألة الخاصة. مقترا، الرسم البياني، ألم رصاص منقولة... الخ. بالإضافة إلى دليل المختبر.
- يمكن حضور أي طالب في شعبة غير مسجل فيها رسميا لأي سبب كان، ويمنع تعريض التجربة منعا باتا.
<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The following data was obtained for a collision experiment using two balls of equal mass. P1i=40 cm. P2f is at an angle of 45° with P1i. The momentum P1f (in cm) is:</td>
</tr>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>28.3</td>
</tr>
</tbody>
</table>

For the experimental setup shown, when \((M_a + M_b)\) was kept constant and equal to 270 g, the graph shown was obtained. The mass of the cart \(M_c\) (in gm) is:

2

![Graph showing acceleration vs. force](image)

In the graph, the velocity of an object as a function of time is shown. The distance (in cm) traveled in the time interval \(t = 0.0\) sec and \(t = 0.3\) sec is:

3

![Graph showing velocity vs. time](image)
When the weight of the sphere exactly balances the viscous drag of the liquid and the buoyant force, it will:

- stay stationary
- move with constant velocity
- move with positive acceleration
- move with negative acceleration

A simple pendulum has a period of 2 seconds in a location where \( g = 9.182 \text{ m/sec}^2 \). The length of the pendulum in \( m \) is:

<table>
<thead>
<tr>
<th>( m )</th>
<th>0.84</th>
<th>0.93</th>
<th>0.87</th>
<th>0.90</th>
</tr>
</thead>
</table>

In the rotational motion of the disc shown, the block \( m = 200 \text{ g} \) was falling with an acceleration of \( 3 \text{ m/s}^2 \). The moment of inertia \( I \) of the disc in \( (g\text{cm}^2) \) is

\[ 102 \times 10^4 \text{ } 107 \times 10^3 \text{ } 114 \times 10^3 \text{ } 110 \times 10^3 \]

In a specific heat experiment, a 100 gm block of copper with specific heat 0.1 cal/gm.\(^\circ\)C is heated to 70\(^\circ\)C and then dropped into a calorimeter containing 50 gm of water at 20\(^\circ\)C. \( C_p = 1 \text{ Cal/g.}^\circ\text{C} \). The final temperature is 25\(^\circ\)C. The heat capacity of the empty calorimeter in Cal./\(^\circ\)C is:

| \( m \) | 40 | 1 | 140 | 200 |

Three forces are acting on a body. The body can be in equilibrium if (\( F_1, F_2 \) and \( F_3 \) refer to the magnitudes of the three forces.)

- \( F_3 \) is less than or equal to \( F_1 + F_2 \)
- \( F_2 \) is less than or equal to \( F_1 + F_3 \)
- \( F_1 \) is less than or equal to \( F_2 + F_3 \)

The relation \( y = f(x) \) for the graph is

\[ y = 4x \quad 10x^4 \quad x^4 \quad 1 + 4x \]
The angle between the velocities of the two balls after the elastic collision:

<table>
<thead>
<tr>
<th>Depends on the position of the target ball relative to the path of the projectile ball</th>
<th>Always 90°</th>
<th>is always less than 90°</th>
<th>is always greater than 90°</th>
</tr>
</thead>
</table>

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The plot of a, the acceleration of a cart of mass M versus the hanging mass m is

<table>
<thead>
<tr>
<th>always linear.</th>
<th>Never linear.</th>
<th>Linear if M is much larger than m</th>
<th>Linear if m is larger than M</th>
</tr>
</thead>
</table>

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A cylinder has radius $R = 1.45$ cm with error 0.01 cm, height $h = 5.22$ cm with error 0.01 cm. The error in the volume of the cylinder (in cm$^3$) is:

<table>
<thead>
<tr>
<th>0.33</th>
<th>0.48</th>
<th>0.37</th>
<th>0.4</th>
</tr>
</thead>
</table>

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In the experiment, changing the angle of swing of the pendulum while keeping it small causes the measured value of $g$ to increase, does not affect the measured value of $g$, causes the measured value of $g$ to decrease, changes the period of the pendulum

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If we plot the applied torque against the angular acceleration in the rotation experiment, the slope represents:

<table>
<thead>
<tr>
<th>The hanging mass</th>
<th>The added mass</th>
<th>The moment of inertia</th>
<th>The radius of the turntable</th>
</tr>
</thead>
</table>

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The heat capacity of an object depends on:

<table>
<thead>
<tr>
<th>the mass of the body.</th>
<th>the material of the body</th>
<th>both mass and material of the body.</th>
<th>The volume of the body.</th>
</tr>
</thead>
</table>

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A metallic ball of diameter $d = 8$ mm and density 9.0 g/cm$^3$ falls through a tube of viscous liquid of density 2 g/cm$^3$, if the viscosity coefficient of the liquid is 14 g/cm.s, then the terminal velocity in cm/s is:

<table>
<thead>
<tr>
<th>18.42</th>
<th>20.32</th>
<th>17.42</th>
<th>14.62</th>
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