

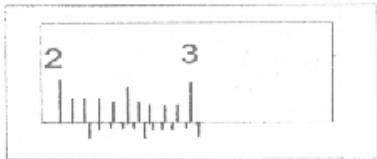
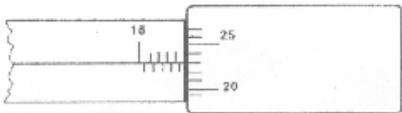
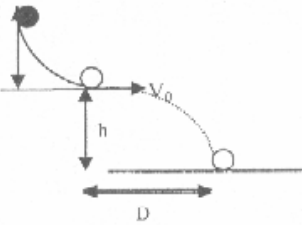
Jordan University of Science and Technology
Department of Physics
Phys.Lab107B/ Midterm Exam/ First Semester 2007/2008

Student Name:
 I.D#:

Section:
 Teacher:

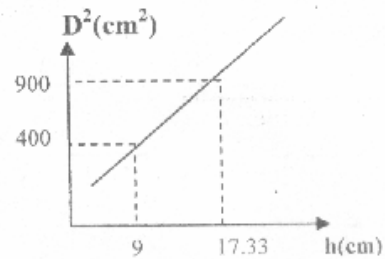
NOTE: answer the following table by capital letters.
 (Assume that the gravity acceleration $g=9.8 \text{ m/s}^2$).

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
A	C	A	D	C	B	C	B	D	B	D	A

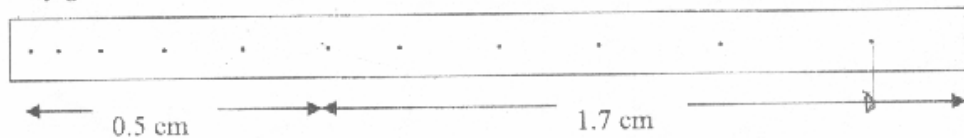
Q1	<p>What is the reading of the following caliper?</p> <p>A- 2.210±0.005cm. B- 2.01±0.05mm. C- 2.21±0.05mm. D- 2.210±0.005 mm.</p>	
Q2	<p>What is the reading of the following Micrometer?</p> <p>A- 1.9730±0.005mm B- 15.423±0.005mm C- 19.730±0.005mm D- 19.730±0.005cm</p>	
Q3	<p>To calculate the density of a sphere. A student get the following measurements. The radius of the sphere is $r = (3.50 \pm 0.05) \text{ mm}$ and the mass is $m = (5.0 \pm 0.1) \text{ g}$. then the relative error in the density $\frac{\Delta \rho}{\rho}$:</p> <p>A- 0.063 B- 0.08 C- 0.15 D- 0.034</p>	
Q4	<p>In Newton's 2nd law exp. if the total mass remains constant. Which of the following statement is True :</p> <p>A- The time increase as the difference in the masses increase. B- The time decreases as the difference in the masses decrease. C- The time remains constant as the difference in the masses change. D- The time decreases as the difference in the masses increase</p>	
Q5	<p>In projectile motion which of the following statement is true:</p> <p>A- The vertical acceleration is equal to zero. B- The horizontal acceleration is equal to $g = 9.8 \text{ m/s}^2$. C- Both vertical & horizontal acceleration are constants. D- The vertical acceleration changes.</p>	
Q6	<p>In question (5). If the initial velocity V_0 is not horizontal but with angle θ. Which of the following quantities remains constant:</p> <p>A- The time of flight. B- The initial velocity. C- The horizontal distance D is constant D- The y-component of V_0.</p>	

Q7 In question (5). If a student studied the relation between the height h and the square distance D^2 , and he plotted the results in the following graph. The height y is:

- A- 12 cm
- B- 60cm
- C- 15 cm
- D- 20 cm.



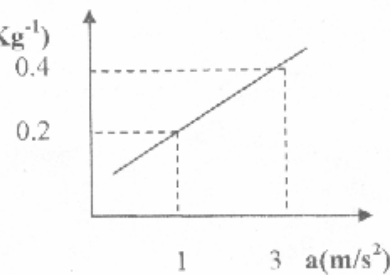
Q8 In the conservation of energy exp. The ticker timer gives the following paper strip (شريط ورقي). If the frequency of the electric current is 50 Hz and $m=100$ g and $M= 1000$ g. Then the acceleration of gravity g in cm/s^2 is:



- A- 980
- B- 1247
- C- 869
- D- 680.

Q9 In Newton's 2nd law exp. (Attwood machine). A student studied the relation between the acceleration a and the inverse of total mass m_1+m_2 and the results is drawn in the following graph. Then the net force is :

$1/(m_1+m_2)(\text{Kg}^{-1})$

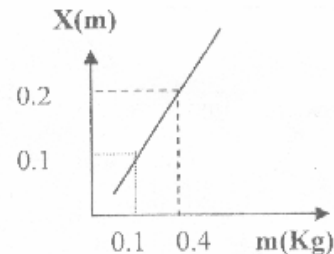


- A- 5N
- B- 0.2N
- C- 15N
- D- 10N

Q10 In the conservation of energy exp. Mass-spring system a student dropped the mass each time from the natural length of the spring, and he obtained the results as shown in the figure. Calculate the spring constant (K).

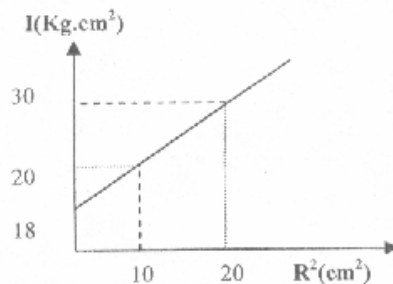
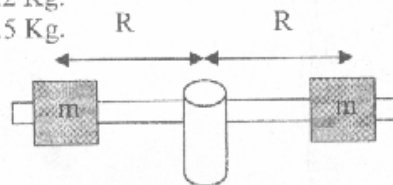
- A- 30 N/m
- C- 40 N/m

- B- 60 N/m
- D- 50 N/m



Q11 In the rotational dynamics exp. A plot of (I vs. R^2) is shown. If the moment of inertia of the cylinder is negligible, the mass m is :

- A- 10 Kg
- B- 0.2 Kg.
- C- 5 Kg.
- D- 0.5 Kg.



Q12 In the previous question the moment of inertia of the rod is:

- A- 18 Kg.cm^2
- B- 10 Kg.cm^2
- C- 15 Kg.cm^2
- D- 30 Kg.cm^2 .

GOOD LUCK