بسم الله الرحمن الرحيم

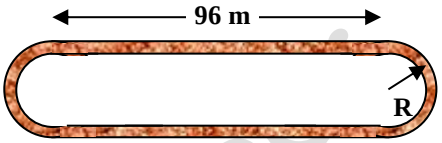
جامعة الملك سعود
كلية العلوم
قسم الفيزياء

103 PHYS TEST

NAME: *Any excellent student*	UNIV. NO.
GROUP:	YOUR PROF. *Dr. A. M. Azzeer*

Answer all questions *(Numbers are rounded in some answers)*. ***Time:***

Q (1). A runner runs around a track consisting of two parallel lines 96m long connected at the ends by tow semicircles with a radius of 49m. If he completes one lap in two minutes, then his average speed is:



(a) 1.6 m/s (b) 4.2 m/s (c) 2.9 m/s (d) 0 m/s

Q (2). A train traveling with a velocity of 20 m/s stops with uniform acceleration in 30 s. The distance traveled before stopping is:

(a) 2250 m (b) 1250 m (c) 750 m (d) 920 m

Q (3). A force F acts on a box of mass m and resulted an acceleration a. If the force F is reduced to its half value and the mass doubled. The new acceleration is:

(a) a (b) 0.25a (c) 0.5a (d) 2a

Q (4). A 1000 kg car is traveled at 20 m/s and due to the friction on the road it forced to stop in 200 m. The frictional force on the car is:

(a) 1200 N (b) 1020 N (c) 1280N (d) 1125 N

Q (5). A boy pulls a box of mass 20 kg a distance 10 m at constant speed across a rough floor whose kinetic friction is 0.3. The work done on the box is:

(a) 588 J (b) 592 J (c) 530 J (d) 570 J

Q (6). A car initially moving at 25 m/s brakes at 3 m/s^2. It takes for the car to stop:

(a) 2.55 s (b) 3.8 s (c) 7 s (d) 8.33 s

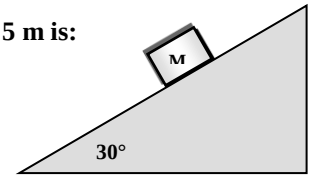
Q (7). A stone is thrown vertically downward from a bridge with an initial velocity of 5 m/s. It strikes the water in 4 seconds. The height of the bridge above the water is:

(a) 58.1 m (b) 98.4 m (c) 20.3 m (d) 74.1 m

Q (8). A box weighing 1000N is pulled along flat ground. If the coefficient of kinetic friction is 0.15, the horizontal force needed to keep the box moving at constant velocity is:

(a) zero (b) 3000 N (c) 4500 N (d) 150 N

Q (9). A 5 kg mass slide down a rough plane inclined at 30°ॅ to the horizontal direction. If the coefficient of friction is 0.2, the work lost due to friction for the first 5 m is:



(a) 70.8 J
(b) 42.4 J
(c) 19.2 J
(d) 54.0 J

Q (10). A 1000-kg car moving at 20 m/s hits a 2000-kg parked car head on. If the collision is completely inelastic, the mechanical energy dissipated is:

(a) 1.202x10^5 J (b) 1.285x10^5 J (c) 1.333x10^5 J (d) 1.185x10^5 J

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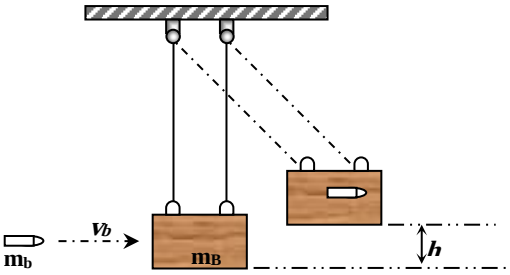
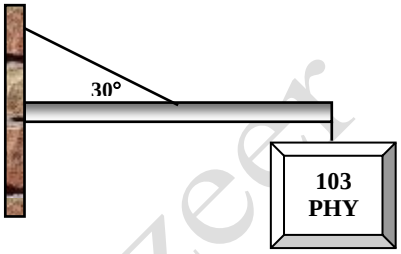
Q (11). A block of mass 1.5 kg suspended by light string as shown is initially at rest when a bullet of mass 0.01 kg is fired horizontally into the wood. The bullet embeds itself in the block, which then swings and reaches a height of 0.35 m. The initial speed of the bullet is:

(a) 10.5 m/s
(b) 150.6 m/s
(c) 3901 m/s
(d) 395.5 m/s



Q (12). A sign of weight *w*=1000 N hangs at the end of a horizontal uniform rod of negligible mass that is hinged at the other end. A supporting cable is attached at the midpoint of the rod and makes a 30° angle with it. The tension in the cable is:

(a) 100 N
(b) 2000 N
(c) 3000 N
(d) 4000 N



مع تمنياتنا لكم التوفيق والنجاح

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