

**PHYSICS**  
**MODEL QUESTIONS**

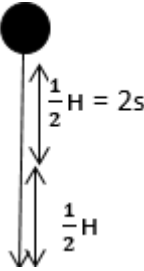
Choose the correct answer from A, B, C, or D for each of the following:

<b>Q-1</b>	Using the following mathematical relations that represent two physical quantities: Quantity (A) = $\frac{1}{2} \times \text{mass} \times \text{velocity squared}$ ( $E_k = \frac{1}{2}mv^2$ ) Quantity (B) = Force x Displacement. ( $W = F \cdot d$ ) So that, the dimensional formula ( $ML^2T^{-2}$ ) represents :
A	Quantity (A) only
B	Quantity (B) only
C	Both (A & B)
D	Neither (A) nor (B)

<b>Q-2</b>	A horse tries to pull a wagon loaded with wood. If the pull force of the horse represents an "action", which force of the following represents the "reaction"?
A	The friction force between the wagon wheels and the ground.
B	The pull force of the wagon to the horse.
C	The air resistance to the wagon.
D	The friction force between the horse legs and the ground

<b>Q-3</b>	A stone and a ball are projected upwards at the same time, where the stone is projected at 20m/s while the ball at 10m/s. If the maximum height reached by the ball is (H), What is the maximum height reached by the stone? (neglecting air resistance against the movement of stone and ball)
A	$\frac{1}{2} H$
B	H
C	2H
D	4H

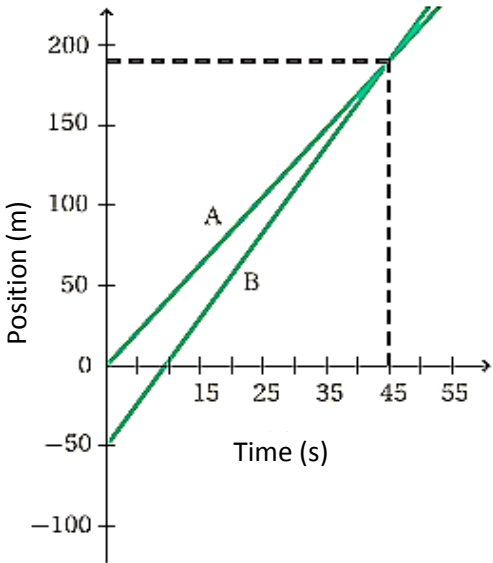
PHYSICS  
MODEL QUESTIONS

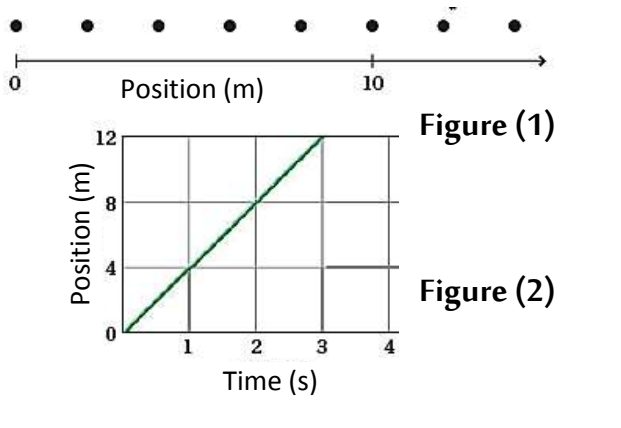
<b>Q-4</b>	<p>The figure represents a ball falling freely from a height (H) above the ground. It takes 2s to reach midway to ground (<math>\frac{1}{2} H</math>). What is the required time for the ball to cover <u>the other half distance</u> to the ground? Given that: (<math>g = 10 \text{ m/s}^2</math>)</p>	
A	3.0 s	
B	2.0 s	
C	0.83 s	
D	0.5 s	

<b>Q-5</b>	<p>A projectile is projected from a canon by <math>45^\circ</math> with the horizontal to reach a maximum height (h) and to cover a horizontal range (X). If the projectile is projected another time by the same canon at the same initial velocity by an angle <math>60^\circ</math>. The maximum height and the horizontal range in this case will be:</p>
A	more than h , more than X
B	more than h , less than X
C	less than h , more than X
D	less than h , less than X

<b>Q-6</b>	<p>When two students measured the time taken by a copper sphere to fall freely from a building of 5 m high, they got the two readings below: The first student's reading: (0.1 s) – the second student's reading: (10 s). What do you think about the two readings?</p>
A	The two readings are reasonable.
B	The 1 <sup>st</sup> reading is reasonable while the 2 <sup>nd</sup> is not.
C	The two readings are not reasonable
D	The 2 <sup>nd</sup> reading is reasonable while the 1 <sup>st</sup> is not.

PHYSICS  
MODEL QUESTIONS

<p><b>Q-7</b></p>	<p>The graph represents the position of two athletes, A and B, who are moving in a straight racetrack in the same direction versus time. At the instant when the athlete (A) is passing by the athlete (B):</p>	
<p>A</p>	<p>Both displacement and velocity of athlete B are equal to those of A.</p>	
<p>B</p>	<p>Both displacement and velocity of athlete B are more than those of A.</p>	
<p>C</p>	<p>Both displacement and velocity of athlete B are less than those of A.</p>	
<p>D</p>	<p>Displacement of athlete B is more than that of A while and the velocity of athlete B equals that of A.</p>	

<p><b>Q-8</b></p>	<p>Figure (1) represents the change in position of a moving body (x) which is observed in equal intervals of time, each of 2s, while figure (2) represents (displacement – time) graph of another moving body (y). which statement describe correctly the motion of the two bodies?</p>	
<p>A</p>	<p>They move at the same velocity.</p>	
<p>B</p>	<p>Velocity of body (x) is twice that of body (y)</p>	
<p>C</p>	<p>Velocity of body (x) is half that of body (y)</p>	
<p>D</p>	<p>Velocity of body (x) is quarter that of body (y)</p>	

PHYSICS  
MODEL QUESTIONS

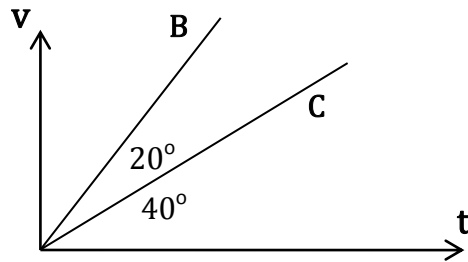
<b>Q-9</b>	<p>Using the following relations:</p> <p><math>F = m \times a</math> (Force = mass x acceleration)</p> <p><math>PE = m \times a \times d</math> (Potential Energy = mass x acceleration height)</p> <p>So, the relation between The Newton (the measuring unit of force) and The Joule ( the measuring unit of potential energy) is:</p>
A	Newton = Joule/meter
B	Newton = Joule. Meter
C	Newton = meter/ Joule.
D	Newton = Joule.

<b>Q-10</b>	If the length of a rectangle = $ 5 \pm 0.1 $ m and its width = $ 4 \pm 0.2 $ m. So, the rectangle area is :
A	$ 9 \pm 0.3  \text{ m}^2$
B	$ 20 \pm 0.3  \text{ m}^2$
C	$ 20 \pm 1.4  \text{ m}^2$
D	$ 20 \pm 0.5  \text{ m}^2$

<b>Q-11</b>	<p>The given figure illustrates two bodies K, Z of masses 2 kg and 5 kg respectively. If the body K affects the body Z on collision with a force of magnitude F, what is the force by which the body Z affects the body K?</p>	
A	- F	
B	F	
C	$\frac{5}{2} F$	
D	$\frac{2}{5} F$	

PHYSICS  
MODEL QUESTIONS

Q-12 The graph represents the relation between the velocities of two bodies (C and B) versus time. What is the ratio between the acceleration of the body C to that of the body B? (Given that : the slope of the line =  $\tan \theta$ )



A 2.30

B 2.06

C 0.48

D 0.43