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Solution 71
Work done is more on the bicycle because the truck does not move at all and the bicycle moves through a certain distance. And work is said to be done only when applied force produces motion in the body.

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Solution 72
The work done will decrease as the angle between the direction of force and direction of motion is increased gradually because
$W = F \cos\theta \times s$
And $\cos\theta$ decreases as the θ is increased.
Solution 73
The work done will be zero when angle between the direction of force and direction of motion is 90^{O} because
$W = F \cos\theta \times s$
and $\cos90° = 0$
Solution 74
Work done will be maximum when angle between the direction of force and direction of motion is 0^{O} because
$W = F \cos\theta \times s$
and, $\cos0° = 1$ and $\cos90° = 0$
Solution 75
The work done is zero because the gravitational force acts along the radius of the circular path, at right angles i.e. 90^{O} to the motion of satellite.
Solution 76
Weight of man = Mg = 800 N
Weight of package = mg = 200 N
Total weight of man and package = Mg + mg = (M+m)g = 1000 N
Height of the summit, h = 1200 m
i) Work done = (M+m) x g x h = 1000 x 1200 = 12×10^5 J
ii) Potential energy of the package = m x g x h = 200 x 1200 = 2.4×10^5 J
Solution 77
Potential energy becomes maximum.
Solution 78
The work done by both X and Y are equal because irrespective of whether they reach the top of building by using a spiral or slanted ladder, the vertical distance moved by them against the gravity is same.
Solution 79
Yes, the kinetic energy of the ball thrown inside a moving bus depends on the
speed of the bus because the speed of the bus adds up to the speed with which
the ball is thrown inside the moving bus.
Solution 80

Mass, m = 15 g = 0.015 kg
Velocity, v = 400 m/s

$KE = \frac{1}{2}mv^2 = \frac{1}{2} \times 0.015 \times 400^2 = 1200$ J

Distance covered beofre stopping, s=2cm=0.02m
Here, initial velocity, u=400m/s
Final velocity=0

$v^2 - u^2 = 2as$

$0^2 - 400^2 = 2 \times a \times 0.02$

$a = -4 \times 10^6 \, m/s^2$ (Negative sign shows retardation)

$F=ma=0.015 \times -4 \times 10^6 = 6 \times 10^4 N$

Kinetic energy of the bullet is mainly converted into heat energy (by friction).

********** END **********