Note: g = 10 m/s^2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

1. If x and t represent position and time, respectively, the dimension of A in

    must be

    a) L/T^{2}b) L/Tc) LT^{2}d) LT

2. A force of 1N is equal to

    a) 1 kg.m/s^{2}b) 1 kg.m/sc) 1 kg/sd) 1 kg.m^2/s

3. A car travels 40 Km at an average speed of 80 km/h and then travels 40 Km at an average speed of 40 km/h. The average speed of the car for this 80-km trip is:

    a) 50 km/hb) 68.8 km/hc) 48.7 km/hd) 53.3 km/h

4. An object moves along the x-coordinate according to the equation x(t)=(3-4 t^2) m. The average velocity between t = 1 and t = 2 s is

    a) 8 m/sb) 12 m/sc) -12 m/sd) 16 m/s

5. A woman pushes a toy car initially at rest by exerting a constant horizontal force of magnitude 5 N, the car moves 1 m. If the mass of the car is 0.2 kg. What is its final speed?

    a) 5 m/sb) 5.8 m/sc) 4.5 m/sd) 7.1 m/s

6. An automobile moving along a straight track changes its velocity from 40 m/s to 80 m/s in a distance of 200 m. What is the (constant) acceleration of the vehicle during this time?

    a) 24 m/s^{2}b) 18 m/s^{2}c) 12 m/s^{2}d) 6 m/s^2

7. A ball is thrown directly downward with an initial velocity of 5 m/s from a

height of 30 m, when does the ball strike the ground?

a) 5 sb) 4 sc) 2 sd) 3 s

8.   A ball is thrown vertically upward from the ground with an initial speed of 3 m/s. How long (in s) does it take the ball to reach its maximum height?

(a) 0.7(b) 0.9(c) 0.3(d) 0.5

9.   A particle is traveling at a speed of 4 m/s and comes to rest after undergoing a constant negative acceleration for 40 m. How long (in s) does it take the particle to come to rest?

(a) 20(b) 8(c) 5(d) 10

10.   A car of mass 1000 kg moving initially at a speed of 20 m/s is brought to stop in a distance 50 m. The stopping force (in N) is

a) 2000   b) 1000   c) 3000   d) 4000

11.   A 10 kg block is released from rest 10 m above the ground. When it has reached the ground its kinetic energy (in J) is:

a) 1000   b) 4000   c) 1200   d) 2200

12.   A 6.0-kg block is released from rest 80m above the ground. When it has fallen 60m its kinetic energy is

(a) 4000 J(b) 3600 J(c) 1200 J(d) 120 J

13.   In the figure below, the coefficient of kinetic friction between the 6-kg object and the surface is 0.2. The force F (in N) necessary to pull both blocks to the right with an acceleration of 3 m/s^2 is

(a) 40(b) 36(c) 24(d) 12

14. Two blocks of masses ☐ kg and ☐ kg are in contact on a smooth table, a horizontal force 9 N is applied to one block as shown the figure. The contact force (in N) between the two blocks is

(a) 4   (b) 3   (c) 6   (d) 2

15. Two blocks of mass 2 kg and 6 kg are connected by a light string that passes over a frictionless pulley (as shown below. The inclines are ,(بكرة ملساء smooth (The acceleration of each block (in m/s2) is .(أملس

(a) 4.33 (b) 2.5 (c) 3.67 (d) 7.5