

Multiple-Choice Questions of Chapter 2

Question 1

A body with initial velocity 8.0 m/s moves along a straight line with constant acceleration and travels 640 m in 40 s. For the 40 s interval, find (a) the average velocity, (b) the final velocity, and (c) the acceleration.

- A) (a) 4.0 m/s, (b) 8.0 m/s, (c) 0.6 m/s<sup>2</sup>
- B) (a) 24 m/s, (b) 16 m/s, (c) 0.20 m/s<sup>2</sup>
- C) (a) 16 m/s, (b) 24 m/s, (c) 0.40 m/s<sup>2</sup>
- D) (a) 0.4 m/s, (b) 160 m/s, (c) 16 m/s<sup>2</sup>

Question 2

A box slides down an incline with uniform acceleration. It starts from rest and attains a speed of 2.7 m/s in 3.0 s. Find (a) the acceleration and (b) the distance moved in the first 6.0 s.

- A) (a) 2.22 m/s<sup>2</sup>, (b) 16 m
- B) (a) 8.1 m/s<sup>2</sup>, (b) 2.7 m
- C) (a) 0.3 m/s<sup>2</sup>, (b) 32.4 m
- D) (a) 0.90 m/s<sup>2</sup>, (b) 16 m

Question 3

An auto's velocity increases uniformly from 6.0 m/s to 20 m/s while covering 70 m in a straight line. Find the acceleration and the time taken.

- A) 0.1 m/s<sup>2</sup>, 5.4 s
- B) 2.9 m/s<sup>2</sup>, 10 s
- C) 5.4 m/s<sup>2</sup>, 3.5 s
- D) 2.6 m/s<sup>2</sup>, 5.4 s

Question 4

A train running along a straight track at 30 m/s is slowed uniformly to a stop in 44 s. Find the acceleration and the stopping distance.

- A) 0.68 m/s<sup>2</sup>, 1320 km
- B) 1320 m/s<sup>2</sup>, 1978 km
- C) -0.68 m/s<sup>2</sup>, 0.66 km
- D) -0.03 m/s<sup>2</sup>, 1335 km

Question 5

A marble dropped from a bridge strikes the water in 5.0 s. Calculate (a) the speed with which it strikes and (b) the height of the bridge.

- A) (a) 1.96 m/s, (b) 49 m
- B) (a) 49 m/s, (b) 120 m
- C) (a) 123 m/s, (b) 245 m
- D) (a) 24.5 m/s, (b) 24.5 m

Question 6

A stone is thrown straight downward with initial speed of 8.0 m/s from a height of 25 m. Find (a) the time it takes to reach the ground and (b) the speed with which it strikes.

- A) (a) 1.6 s, (b) 24 m/s

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- B) (a) 3.1 s, (b) 554 m/s
- C) (a) 2.3 s, (b) 9.8 m/s
- D) (a) 3.2 s, (b) 22.3 m/s

Question 7

A bottle dropped from a balloon reaches the ground in 20 s. Determine the height of the balloon if (a) it was at rest in the air and (b) it was ascending with a speed of 50 m/s when the bottle was dropped.

- A) (a) 98 km, (b) 2960 km
- B) (a) 196 km, (b) 1960 km
- C) (a) 0.49 km, (b) 1000km
- D) (a) 2.0 km, (b) 0.96 km

Question 8

An auto travels at the rate of 25 km/h for 4.0 minutes, then at 50 km/h for 8.0 minutes, and finally at 20 km/h for 2.0 minutes. Find (a) the total distance covered in km and (b) the average speed for the complete trip in m/s.

- A) (a) 540 km, (b) 642 m/s
- B) (a) 12.5 km, (b) 38.6 m/s
- C) (a) 10.7 km, (b) 126 m/s
- D) (a) 9.0 km, (b) 10.7 m/s