Dpp. 1
Subject: Physics
Batch: Endeavor advanced
Chapter: Kinematics

1. A ball is thrown upwards with a velocity of 40 m/s. It is at 5 m below the highest position at t =3. Find the value of time when particle will be at same height again.
   (a) 4 s (b) 5 sec (c) 6 sec (d) 4.5 sec
2. A stone is dropped into a well in which the level of water is h, below the top of the well. If v is velocity of sound, then time T after which the splash is heard is equal to
   (a) $\frac{2h}{v}$ (b) $\sqrt{\frac{2h}{v}}+\frac{h}{g}$ (c) $\sqrt{\frac{2h}{g}}+\frac{h}{v}$ (d) $\sqrt{\frac{h}{2g}}+\frac{2h}{v}$
3. A body covers 200cm in the first 2 sec . and 220 cm in next 4sec. What is the velocity of the body at the end of 7th second?
   (a) 40 cm/ sec (b) 20 cm/ sec (c) 10 cm/ sec (d) 5 cm/ sec
4. Two bodies having m_1 and m_2 such that $m_1>m_2$. Both the bodies are released from the same height with zero initial speed. Then:
   (a) m_1 will touch the ground before m_2 (b) m_2 will reach the ground before m_1.
   (c) Both will touch the ground at same time. (d) Can't determine
5. A motorist travels from A to B at a speed of 40 km/hr and returns back at a speed of 60 km/hr. His average speed will be :
   (a) 40 km/hr (b) 48 km/hr (c) 50 km/hr (d) 60 km/hr
6. A particle's position as a function of time is described as $y(t) = 2t^2 + 3t + 4$. What is the average velocity of the particle from t = 0 to t = 3 sec?
   (a) 3 m/sec (b) 6 m/sec (c) 9 m/sec (d) 12 m/sec
7. A particle moving in a straight line covers half the distance with speed 3 m/s. The other half of the distance is covered in two equal time intervals with speed of 4.5 m/s and 7.5 m/s respectively. Average speed of the particle during this motion is :
   (a) 4.0 m/s (b) 5.0 m/s (c) 5.5 m/s (d) 4.8 m/s
8. In 1.0 s, a particle goes from point A to B, moving in a semicircle of radius 1.0 m. The magnitude of the average velocity is :

   (a) 3.14 m/s (b) 2.0 m/s (c) 1.9 m/s (d) zero

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9. The displacement s of a point moving in a straight line is given by :

$$s = 8t^2 + 3t - 5$$

s being in cm and t in s. The initial velocity of the particle is:

(a) 3 cm/s (b) 16 cm/s (c) 19 cm/s (d) zero

10. The initial velocity of a particle is u and acceleration a(const) is given by at. Which of the following relations is valid?

(a) $\upsilon = u + at^2$ (b) $\upsilon = u + at^2 / 2$ (c) $\upsilon = u + at$ (d) $\upsilon = u$

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