# Yakeen NEET 2.0 2026

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**DPP: 12**

## Motion in a Straight Line

**Q1** A balloon starts rising from ground from rest with an upward acceleration $2\ \mathrm{m/s^2}$. Just after $1s$, a stone is dropped from it. The time taken by stone to strike the ground is nearly
(A) $0.3\ \mathrm{s}$
(B) $0.7\ \mathrm{s}$
(C) $1\ \mathrm{s}$
(D) $1.4\ \mathrm{s}$

**Q2** A stone is dropped into water from a bridge $44.1\ \mathrm{m}$ above the water. Another stone is thrown vertically downward $1\mathrm{sec}$ later. Both strike the water simultaneously. What was the initial speed of the second stone?
(A) $12.25\ \mathrm{m/s}$
(B) $14.75\ \mathrm{m/s}$
(C) $16.23\ \mathrm{m/s}$
(D) $17.15\ \mathrm{m}$

**Q3** If a ball is thrown vertically upwards with speed $u$, the distance covered during the last $t$ seconds of its ascent is
(A) $ut$
(B) $\frac{1}{2}gt^2$
(C) $ut - \frac{1}{2}gt^2$
(D) $(\mathrm{u} + gt)t$

**Q4** When a ball is thrown vertically up with velocity $v_0$, it reaches a maximum height $h$. If one wishes to triple the maximum height, then the ball should be thrown with velocity
(A) $\sqrt{3}v_0$
(B) $3v_0$
(C) $9v_0$
(D) $3/2v_0$

**Q5** An object is dropped vertically down on earth. The change in its speed after falling through a distance $d$ from its highest point is
(A) $mgd$
(B) $\sqrt{2gd}$
(C) $2\sqrt{\frac{g}{d}}$
(D) $2\sqrt{\frac{mg}{d}}$

**Q6** The ratio of the distance traversed, in successive intervals of time by a body falling from rest, are
(A) $1:3:5:7:9:\ldots\ldots\ldots$
(B) $2:4:6:8:10:\ldots\ldots\ldots$
(C) $1:4:7:10:13:\ldots\ldots\ldots$
(D) None of these

**Q7** A ball is thrown vertically upwards. Assuming the air resistance to be constant and considerable:
(A) the time of ascent $\geq$ the time of desent
(B) the time of ascent $<$ the time of descent
(C) the time of ascent $>$ the time of descent
(D) the time of ascent $=$ the time of descent

# Answer Key

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|---|---|
| Q1 | (B) |
| Q2 | (A) |
| Q3 | (B) |
| Q4 | (A) |
| Q5 | (B) |
| Q6 | (A) |
| Q7 | (B) |