E. Problem

INCERT

1. A particle travels half a distance at 12 km/h and the remaining half at 18 km/h. Calculate the average speed.

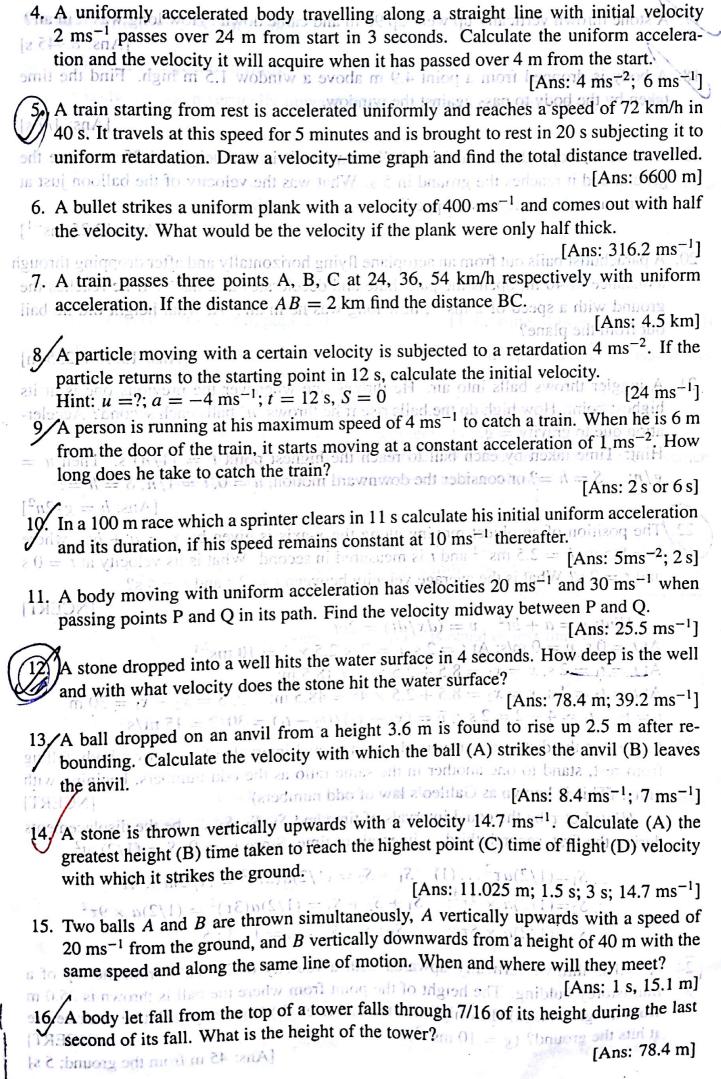
[Ans: 14.4 km/h]

2. A particle moving with an initial velocity of 60 ms⁻¹ is brought to rest in a distance of 120 m. Assuming the deceleration uniform, calculate the retardation and the time interval.

emit this decrease with time [Ans: 115 ms E2; 4 s]

3. Starting from rest from one end of a runway, a jet airliner acquires a speed of 90 ms⁻¹ in one minute. Find (A) the acceleration (B) distance travelled and (C) speed at the end of the first 40 s.

sched bevius bas is $[Ans: 1.5 \text{ ms} \mathbb{T}^2; 2700 \text{ m}; 60 \text{ ms}^{-1}]$



A stone thrown vertically up went up 98 m and came down. How long was it in air? [s chesses over 24 m from start in 3 seconds. Calculate the uniform acc tion and the velocity it will acquire when it has passed over 4 m from the start . A body is dropped from a point 4.9 m above a window 1.5 m high. Find the time taken by the body to pass against the window. at this speed for 5 minutes and is brought to resum 20 stablecting it to 19. A stone is dropped from a rising balloon when it is at a height 61.25 m above the ground and it reaches the ground in 5 s. What was the velocity of the balloon just at 6. A bullet strikes a uniform plank with a veloc?baqqorblasw anota aht tnamom aht balt $[-2m_122_12hc:$ $\sin A]$ What would be the velocity if the plants were only half thick 20. A parachutist bails out from an aeroplane flying horizontally and after dropping through a distance of 40 m, opens the parachute and decelerates at 2 ms⁻². If he reaches the ground with a speed of 2 ms⁻¹, how long was he in air? At what height did he bail out from the plane? [m 282;2868;215:sinA]s with a certain velocity is subjected to a returdation of ms 21. A juggler throws balls into air. He throws one whenever the previous one is at its highest point. How high do the balls rise if he throws 'n' balls each second? Acceleration due to gravity = g. Hint: Time taken by each ball to reach the highest point t = (1/n) s. Then u =S = h = ? or consider the downward motion, u = 0, t = 1/n, S = h = ?