In a line of sight ratio communication, a distance of about $50km$ is kept between the transmitting and receiving antennas. If the height of the receiving antenna is $70m$, then the minimum height of the transmitting antenna(Radius of the Earth $= 6.4 \times 10^6 m$). ***[8 April 2019 II]***

- $20m$
- $51m$
- $32m$
- $40m$

Solution:

(c) $LOS = \sqrt{2h_T R} + \sqrt{2h_R R}$

or $50 \times 103 = \sqrt{2h_T \times 6.4 \times 10^6} + \sqrt{2 \times 70 \times 6.4 \times 40^6}$

On solving, $h_T = 32m$