11 A satellite of mass m is in a circular orbit around a planet of mass M and radius R. The satellite is traveling at a constant speed v at a height of H above the surface of the planet.

What is the total energy of the satellite?

A $\frac{1}{2}mv^2 - \frac{GMm}{R}$

B $\frac{1}{2}mv^2 - \frac{GMm}{R+H}$

C $\frac{1}{2}mv^2 + \frac{GMm}{R}$

D $\frac{1}{2}mv^2 + \frac{GMm}{R+H}$