7 A planet has a mass M and a radius R. An object at the equator only just remains in contact with the surface of the planet. This is because the speed at which the planet rotates is very large.

What is the period of rotation of the planet?

A $2\pi\sqrt{\dfrac{R^2}{GM}}$

B $2\pi\sqrt{\dfrac{GM}{R^2}}$

C $2\pi\sqrt{\dfrac{R^3}{GM}}$

D $2\pi\sqrt{\dfrac{GM}{R^3}}$