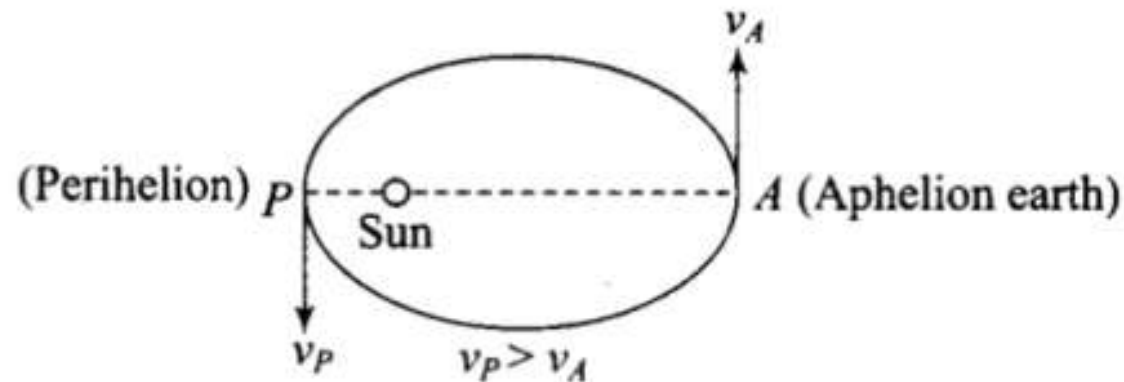


**Q. 04 Out of aphelion and perihelion, where is the speed of the earth more and why?**

**Sol:** Aphelion is the location of the earth where it is at the greatest distance from the sun and perihelion is the location of the earth where it is at the nearest distance from the sun. According to the diagram given below point A represents aphelion and point P perihelion.



According to the Kepler's second law, a real velocity is constant. So,

$$r_p \times v_p = r_A \times v_A$$

$$\Rightarrow \frac{r_A}{r_p} = \frac{v_p}{v_A}$$

Therefore,  $r_A > r_p$ . So,  $v_p > v_A$ .

Plane of

Therefore, the speed of the earth is more at the perihelion than at the aphelion.