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State Fermat's principle ;
of least path or least time.

Statement :-

Fermat's principle is applicable to geometrical optics for plane surface. It is studied as the principle of the stationary path.

Fermat's principle of least path states that in obeying the law of reflection or refraction (on plane surfaces) the path of light between any two points is such that it is always a minimum. Since velocity of light is constant in one media, the least path will be travelled in the least time. Therefore, this principle is also known as the principle of least time.

In the case of spherical surfaces, the path travelled between any two points due to reflection or refraction is either a minimum or a maximum. In other words, the path in such a case is stationary.

$\sum_1^n \mu dx = \text{stationary}$
or constant

$$\therefore d\left\{\sum_1^n \mu dx\right\} = 0$$

