## Condition of Validity :-

From above method we have used equation ⑦ in obtaining the equation ⑭.

∴ equation ⑦ will gives us condition of validity., then from equation ⑦b),

$$\longrightarrow \quad \frac{d^2y}{dx^2} = \frac{d}{dx}\left(\frac{dy}{dx}\right)$$

$$= \pm \frac{d}{dx}(k(x)) \qquad \{\text{by equation (7c)}\}$$

using this condition in equation ⑦c) than equation becomes.

$$\longrightarrow \quad \left|\pm i \frac{dk}{dx}\right| << k^2 \ , \text{or}, \ k^2 >> \left|\pm i \frac{dk}{dx}\right|$$

i.e

$$\longrightarrow \quad \left|\frac{dk}{dx}\right| << k^2$$

or

$$\longrightarrow \quad \left|\frac{1}{k^2} \frac{dk}{dx}\right| << 1 \quad \text{————⑱},$$

the equation ⑱ will gives us the validity of

W.K.B. approximation.

or, in other words we can say that W.K.B solution are valied, than this solution are satisfied.