

## MAXIMUM FREQUENCY LIMIT:-

At the other extreme, consider a wave with  $k = \pi/a$  which has the maximum frequency possible ( $\omega = \omega_m$ ). This wave has a wavelength  $\lambda = 2a$ . As seen in Figs. 3-7 and 3-8, half of the atoms move in one direction, and half move in the opposite direction.

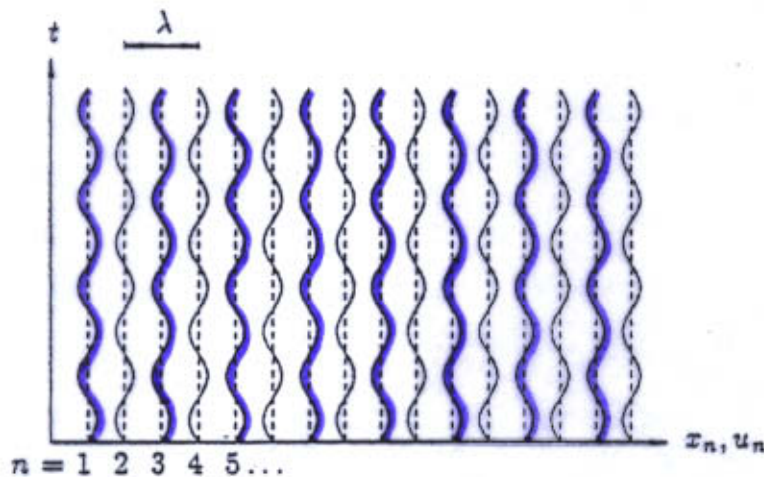


Fig. 3-7. One-dimensional lattice wave for  $\lambda = 2a$  ( $k = \pi/a$ ).

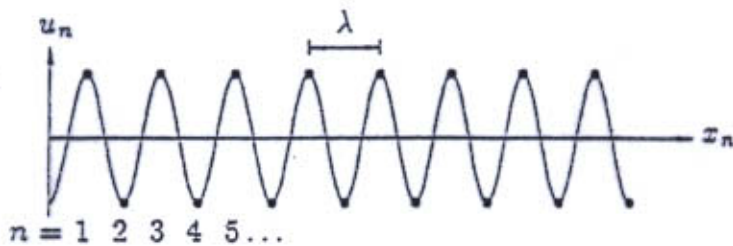


Fig. 3-8. Alternate graphical representation of the lattice wave in Fig. 3-7.