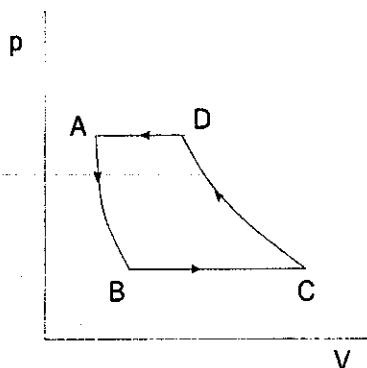


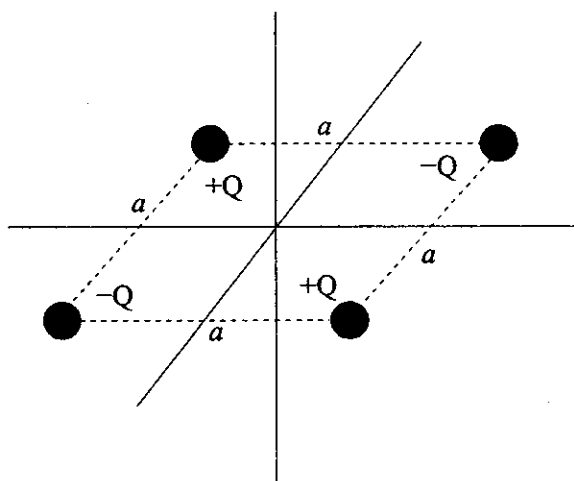
- (c) the particle will keep oscillating about the same mean position but with increasing amplitude as time increases
- (d) the particle will undergo a transition to one of the higher excited states of the harmonic oscillator

A16. The  $pV$  diagram given below represents a



- (a) Carnot refrigerator
- (b) Carnot engine
- (c) gas turbine refrigerator
- (d) gas turbine engine

A17. In the laboratory, four point charges  $+Q$ ,  $-Q$ ,  $+Q$ ,  $-Q$  are placed at the four ends of a horizontal square of side  $a$ , as shown in the figure below. The number of neutral points (where the electric field vanishes) is



- (a)  $\infty$
- (b) 4
- (c) 1
- (d) zero