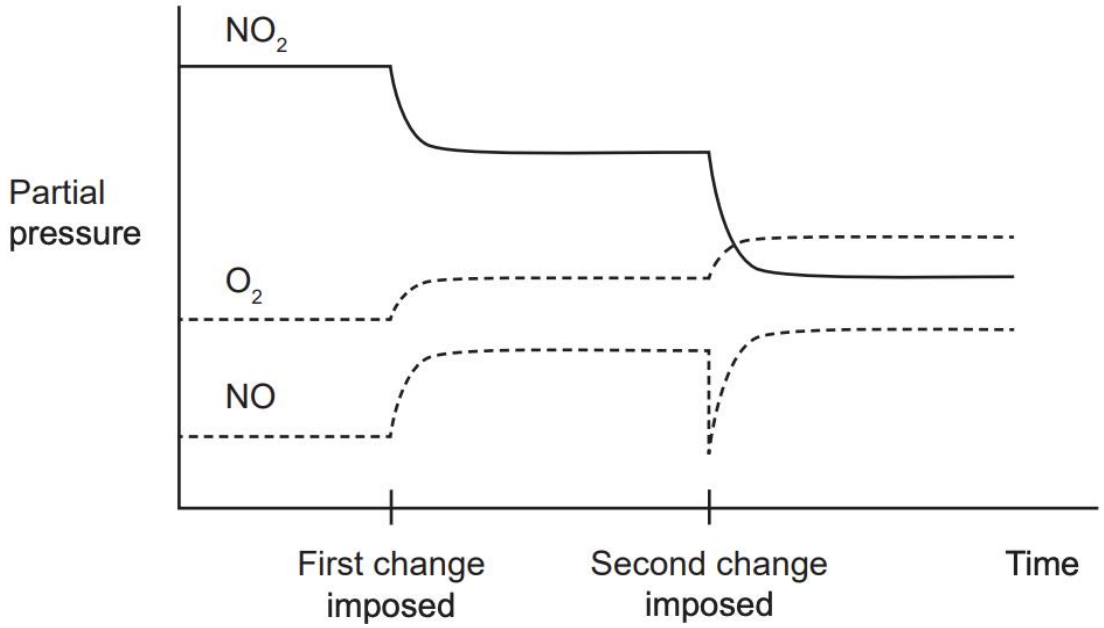
Nitrogen dioxide, $NO_2(g)$, is formed when nitrogen monoxide, NO(g), undergoes oxidation as shown below.

$$2\ NO(g) + O_2(g) \rightleftharpoons 2\ NO_2(g) \qquad \Delta H = -62\ kJ\ mol^{-1}$$

A change was imposed on an equilibrium gas mixture of NO_2, NO and O_2. The mixture returned to equilibrium and another change was imposed. The following graph shows the effects of the two changes.



4. What do the initial partial pressures of the three gases indicate?

(a) The relative proportions of the gases present at equilibrium.
(b) That there is initially no NO gas present in the system.
(c) That the NO_2 gas reaches equilibrium first.
(d) That the O_2 and NO gases are producing NO_2 at a faster rate than they are being formed.