**21.** 
$$C(s) + H_2(g) + O_2(g) \rightarrow HCOOH(\ell)$$

$$\Delta H = a$$

$$\mathsf{HCOOH}(\ell) + \frac{1}{2}\mathsf{O}_2(\mathsf{g}) \rightarrow \mathsf{CO}_2(\mathsf{g}) + \mathsf{H}_2\mathsf{O}(\ell)$$

$$\Delta H = b$$
  
 $\Delta H = c$ 

$$C(s) + O_2(g) \rightarrow CO_2(g)$$

$$\Delta H = C$$

$$H_2(g) \ + \ \tfrac{1}{2}O_2(g) \ \rightarrow \ H_2O(\ell)$$

$$\Delta H = d$$

What is the relationship between a, b, c and d?

A 
$$a = c + d - b$$

$$B \qquad a = b - c - d$$

$$C \quad a = -b - c - d$$

$$D \quad a = c + b + d$$

[Turn over

