14 The contents of a refrigerator are at a constant temperature, and the surroundings of the refrigerator are at a higher temperature. Because of this, thermal energy flows into the refrigerator from outside, and is removed at the same rate by cooling mechanism.

The first law of thermodynamics may be applied to the contents of the refrigerator. This law is represented by $\Delta U = Q + W$ where ΔU is the increase of internal energy of the contents of the refrigerator, Q is the net heating of the contents and W is the mechanical work done on the contents.

For the refrigerator contents, which of the following quantities ΔU, Q and W is/are zero?

A ΔU only

B Q only

C W only

D each of ΔU, Q and W