

2 (a) State **two** ways in which the first law of thermodynamics describes that the internal energy of a system may be changed.

1

.....

2

.....

[2]

(b) (i) Use the first law of thermodynamics to explain why a bicycle pump gets hot when it is used to pump up a tyre quickly.

.....

.....

.....

.....

..... [3]

(ii) With reference to molecular energies, explain why the temperature of water remains at 100°C when it vaporises in a kettle, even though it is being heated.

.....

.....

.....

.....

..... [3]

[Total: 8]