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

1 .....

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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.

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..... [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.

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..... [3]

[Total: 8]