

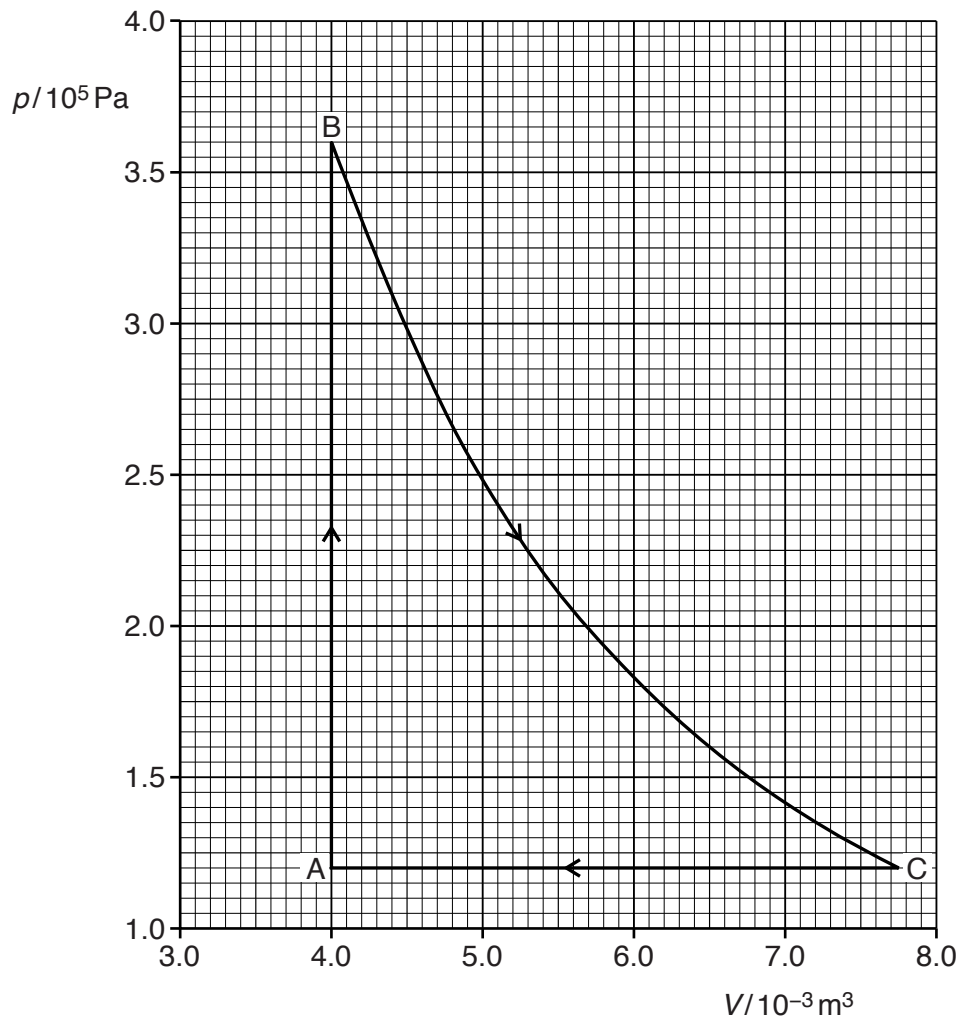
- 2 (a) State what is meant by *internal energy*.

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..... [2]

- (b) The variation with volume  $V$  of the pressure  $p$  of an ideal gas as it undergoes a cycle ABCA of changes is shown in Fig. 2.1.



**Fig. 2.1**

The temperature of the gas at A is 290 K. The temperature at B is 870 K.

Determine

(i) the amount, in mol, of gas,

amount = ..... mol [2]

(ii) the temperature of the gas at C.

temperature = ..... K [2]

(c) Explain why the change from C to A involves external work and a change in internal energy.

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..... [2]