

**ENGINEERING TRIPOS PART IIB 2010**  
**MODULE 4A9 – MOLECULAR THERMODYNAMICS**

**ANSWERS**

1. (c)  $A = \frac{u_0 \rho \bar{C} \lambda}{2}$

2. (b)  $A = 2$       (b)  $B = 2$

3. (a) (i) 0      (ii)  $S = k \ln \Omega$       (b)  $\Omega_1 / \Omega_2 = \exp(-9.63 \times 10^{23})$

4. (a)  $\Gamma(\epsilon) = 4\pi V (2m\epsilon)^{3/2} / 3h^3$       (b)  $2.42 \times 10^{29}$  states

A.J. White & J.B. Young