

## GATE 2015 (XE-C)

Useful Data:

Avogadro's number	:	$6.023 \times 10^{23} \text{ mol}^{-1}$
Boltzmann's constant (k)	:	$1.38 \times 10^{-23} \text{ J K}^{-1}$
Electron charge (e)	:	$1.6 \times 10^{-19} \text{ C}$
Electron rest mass ( $m_0$ )	:	$9.1 \times 10^{-31} \text{ kg}$
Gas constant (R)	:	$8.314 \text{ J K}^{-1} \text{ mol}^{-1}$
Permittivity of free space ( $\epsilon_0$ )	:	$8.854 \times 10^{-12} \text{ F m}^{-1}$
Speed of light (c)	:	$3 \times 10^8 \text{ m s}^{-1}$
Planck's constant (h)	:	$6.63 \times 10^{-34} \text{ J s}$

$$1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$$

$$1 \text{ calorie} = 4.2 \text{ J}$$