Question Number	Answer	Mark
15(a)	$\lambda_{max} = 0.37 \rightarrow 0.40$ (μm) (1) Use of $\lambda_{max}T = 2.898 \times 10^{-3}$ m K (1) $T = 7600$ K (accept answer consistent with their stated value of λ_{max}) (1) Example of calculation $T = \frac{2.898 \times 10^{-3}\ \text{m K}}{0.38 \times 10^{-6}\ \text{m}} = 7626\ \text{K}$	**3**
15(b)	Corresponding pair of wavelengths recorded (one from each spectrum) (1) Wavelength shift calculated (dependent upon MP1) (1) Use of $\frac{\Delta\lambda}{\lambda} \approx \frac{v}{c}$ (value of λ must be taken from lab spectrum) (1) $v = 1.5 \times 10^7$ m s^{-1} [1.8×10^7 m s^{-1} if smaller wavelength pair used] (1) (v will depend upon in-range values used) Star is receding (1) Example of calculation $\lambda_{star} = 654$ nm $\rightarrow 658$ nm $\quad \lambda_{lab} = 622$ nm $\rightarrow 626$ nm **Or** $\lambda_{star} = 479$ nm **or** 480 nm $\quad \lambda_{lab} = 452$ nm $\rightarrow 456$ nm $v = 3.00 \times 10^8\ \text{m s}^{-1} \times \frac{(656\ \text{nm} - 624\ \text{nm})}{624\ \text{nm}} = 1.54 \times 10^7\ \text{m s}^{-1}$	**5**
	Total for question 15	**8**