PHAS1202 - Exam Summer 2013: Numerical Solutions

1 a) 73 μm = 7.3×10^{-5} m (2 s.f.)
1 b) 6.63×10^{-38} m (3 s.f.)

7 d) 5.3×10^{-11} m (2 s.f.)
7 e) 660 nm (2 s.f.)
7 f) 2.6×10^{-11} m (2 s.f.)

8 e) 1.81×10^{-17} J (3 s.f.), 11.0 nm (3 s.f.)

9 d) C = 1.05×10^{10} m^{-1} (3 s.f.)
9 e) 0.8 A (1 s.f.)

10) Surface temperature of star: T_{eff} = 7500K
Peak wavelength: 4×10^{-7} m
Radial velocity: -19.7 km s^{-1}

11) Schwarzschild radius: 423 solar radii
Average density: 1.8×10^{3} kg m^{-3}