

4B13 2014 – Numerical answers

- 1 (a) 0.121 V, +/- 10.3 K
(b) 2.4 s, 0.066 Hz
(c) 0.62 mW IR, 6.2 mV
- 2 (b)(i) $dR/R = 3.2 \times 10^{-7}$, 0.8 μ V
(b)(ii) 38.5 nm
(b)(iii) 1.07 mV
- 3 (c) 2.27 mH, 3.10 nF
(d) Q = 53.5, 0.289 V
- 4 (a) 58.8 μ V matched load, 0.118 mV open cct.
(b)(i) 1.31 nA
(b)(ii) q.e. = 111 % (photo-diode can have gain)
clear range 3.42 km, atten. (by iteration) 1.35 km