

4B13 ELECTRONIC SENSORS & INSTRUMENTATION

NUMERICAL ANSWERS 2011

- 1(a) 7.22 mW
1(b) 0.426 mV rms into open cct.
1(c) 5.74 pW, 0.214 mV rms into open cct.

- 2(b)(i) 2.66 pF
2(b)(ii) 0.44 %
2(b)(iii) 0.725 V
2(c)(i) 3.81 kHz, 0.245 V
2(c)(ii) 0.033 V

- 3(a) 0.118 T
3(b) 82.6 mV
3(c) 18.4 kHz
3(d) 2.35 mA rms
3(e) 3.4 mA

- 4(a) Lamb. twice as bright
4(b) 0.311 nW
4(c) 354:1 or 51 dB
4(d) 5.01 m

- 5(a) 3.42 mV
5(b) 1.07 mV = 15.6 kgf
5(c) 8.5 s rise-time