

VE320 Homework7

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Ex 7.1

(a)

$$\phi_{B0} = 0.65 \text{ eV}$$

$$I_{sT} = AA^*T^2 \exp \frac{-\phi_{B0}}{V_T} = 2.948 \times 10^{-8} \text{ A}$$

(i)

$$V_a = V_t \ln \frac{I}{I_{sT}} = 0.151 \text{ V}$$

(ii)

$$V_a = V_t \ln \frac{I}{I_{sT}} = 0.211 \text{ V}$$

(iii)

$$V_a = V_t \ln \frac{I}{I_{sT}} = 0.270 \text{ V}$$