B.19 The expectation is equal to the mean of $\ln S_T$, the result gives the time 0 no-arbitrage value of the log contract (see also Exercise A.6):

$$L_0 = \mathrm{e}^{-rT} \mathrm{E}_0^Q \left[\ln S_T \right] = \mathrm{e}^{-rT} \left(\ln S_0 + (r - \sigma^2/2)T \right).$$