Solution to Problem 4.11

This is actually exactly the same problem as the one analysed in Section 4.5.3. The only difference is that whereas the queue considered in Section 4.5.3 is for the case where the actual service times for both classes have a general distribution, the case considered here has fixed (deterministic) service times for both the classes. If X_1 and X_2 are the fixed service times of Class 1 and Class 2, respectively, then the corresponding L.T. of their pdf's will be $L_{B1}=exp(-sX_1)$ and $L_{B2}=exp(-sX_2)$. Appropriate substitution using these values will yield the required solution.