

(b)

For path, $ABCD A = 5 + \alpha$ and
 $ADCBA = 5 + \alpha$ will never be optimal

for any value of α .

For $\alpha \in [1, 2]$, paths $ACBDA$ and $ADBCA$
will be optimal

Paths $ABDCA$, $ACDBA$ will be optimal for $\alpha > 2$