

Reinforcement Learning - Monsoon 2022  
IIITD  
Assignment 1  
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*Answer 4*

$s$	$a$	$s'$	$r$	$p(s', r   s, a)$
high	search	high	$r_{\text{search}}$	$\alpha$
high	search	low	$r_{\text{search}}$	$1 - \alpha$
low	search	high	-3	$1 - \beta$
low	search	low	$r_{\text{search}}$	$\beta$
high	wait	high	$r_{\text{wait}}$	1
low	wait	low	$r_{\text{wait}}$	1
low	recharge	high	0	1

Here I assumed that the rewards are deterministic rather than stochastic, since no distribution is provided for the rewards. So for all possible state transitions with non-zero probabilities, we just give that reward with probability 1, and values for  $p(s', r | s, a)$  become the probabilities of  $p(s' | s, a)$  for the corresponding state transition.