MDP problem Solved using iteration algorithm:

The trace file for first part shows clearly that it took 119 iterations for convergence (if generation is 1 indexed) and rate of convergence is 2.37. In the last generation , most of the results seems logical , like when the mm have high health like above 50 and is in Ready state and ij is on west tile then he would like to stay there only ,as it don't want monster to attack him if he move to centre tile . Once if in the same situation , the monster is in Dormant state , then ij would love to move right to reach centre so that he can carry out his counter attack from there.

Similarly if ij is on east tile , then his shooting accuracy is too great so it is reasonable for him to take risk there and start shooting against the mm.

Now for first part , using the policy according to our trace file , we want to predict that what actions ij would take from a certain start state , and after each action , we'll try to simulate the situation as given in problem statement and will continue to do so until we reach an end state. It is shown as a sequence of actions in the image below:
(West , 0 , 0 , Dormant , 100 : Right
(Centre , 0 , 0 , Dormant , 100 : Right
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Ready , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Ready , 100 : Hit

(East , 0 , 0 , Ready , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Ready , 50 : Hit
(East , 0 , 0 , Ready , 50 : Hit
(East , 0 , 0 , Ready , 50 : Hit
(East , 0 , 0 , Dormant , 75 : Hit
(East , 0 , 0 , Dormant , 25 : Hit
End State Reached!

For new start State:

(Centre , 2 , 0 , Ready , 100 : Up
(Centre , 2 , 0 , Dormant , 100 : Right
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
End State Reached!

For task-2:
Case-1:
Iterations = 121
Rate of convergence = 2.248

Now the most significant change as expected took in east tile states. Now if the ij is on east tile and the monster is in ready state then ij wuld choose to go left as it can be safely placed on west tile then. The image below shows the examples of two outcomes of actions taken by ij accoring to our policy made by IA:
(West , 0 , 0 , Dormant , 100 : Right
(Centre , 0 , 0 , Dormant , 100 : Right
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 100 : Hit
(East , 0 , 0 , Dormant , 50 : Hit
(East , 0 , 0 , Dormant , 50 : Hit
(East , 0 , 0 , Dormant , 50 : Hit
(East , 0 , 0 , Dormant , 50 : Hit
(East , 0 , 0 , Dormant , 50 : Hit
End State Reached!

For new start State:

(Centre , 2 , 0 , Ready , 100 : Up
(Centre , 2 , 0 , Dormant , 100 : Right
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Ready , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit

(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 50 : Hit
(East , 2 , 0 , Dormant , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
(East , 2 , 0 , Dormant , 75 : Hit
(East , 2 , 0 , Ready , 75 : Hit
(East , 2 , 0 , Ready , 75 : Hit
(East , 2 , 0 , Ready , 75 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Ready , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 100 : Hit
(East , 2 , 0 , Dormant , 50 : Hit
(East , 2 , 0 , Dormant , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
(East , 2 , 0 , Ready , 50 : Hit
(East , 2 , 0 , Dormant , 75 : Hit
(East , 2 , 0 , Dormant , 75 : Hit
(East , 2 , 0 , Dormant , 75 : Hit

(East , 2 , 0 , Dormant , 25 : Hit
(East , 2 , 0 , Dormant , 25 : Hit
End State Reached!
Case-2:
Iterations = 57
rate of conversion = 1.9
Many significant changes can be observed in this case. Now on the west square stay becomes the most favourable action as the step cost for it is not negative and is just zero as compared to other actions stepcost. So overall ij would tend to reach west somehow because the utility there of stay action is far greater than other utilities. Now once it reaches the West ij will likely choose stay action always and the story will never end and no end state will be reached. Hence our code shown that Some states are repeating forever and there is no progress in the story towards end state. Below is the sequence of actions that we predicted:-

(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Ready , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Ready , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay

(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
(West , 0 , 0 , Dormant , 100 : Stay
Case-3:-
Once we reduce the value of discount factor that theoretically means that we are giving less importance to the rewards that we can earn in the future states. That simply means we care less about future and more about the present. In tiles where we can earn reward , it is more likely that we will love to attack rather than transitioning to other states.
Iterations = 8
Rate of Convergence = 5.12
the possible outcomes after taking a route using our policy:
(Centre , 2 , 0 , Ready , 100 : Left
(Centre , 2 , 0 , Dormant , 100 : Left
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Ready , 100 : Stay
(West , 2 , 0 , Ready , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Ready , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Ready , 100 : Stay
(West , 2 , 0 , Ready , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay

(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Dormant , 100 : Stay
(West , 2 , 0 , Ready , 100 : Stay