23k-0065
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BAI-4A

Assignment (03)

Question (02):

Initial population is generated

Assume
{ [3 2 2 2 2 2 3]
[2 2 1 3 1 2 3]
[2 2 2 3 1 1 1]
[3 2 2 3 2 1 3]
and so on until 6 in total }

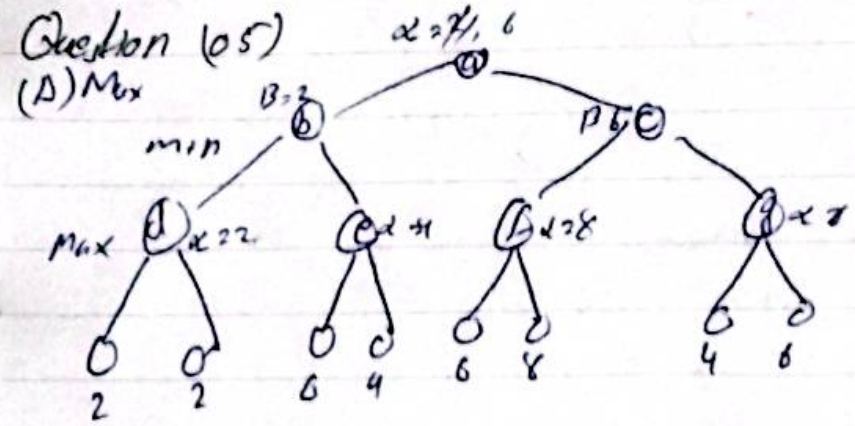
After this, 2 chromosomes from this are selected. Firstly, their fitness are calculated
eg [-76, -82, -82, -80, -78, -82]
(-ve since we have to minimize)
Because we can use roulette wheels, probabilities are calculated. eg [0.158, 0.171, 0.171, 0.671, 0.163]

The 2 parents are selected based on these probability eg.
p_1 = [3 2 2 2 2 2 3]
p_2 = [2 2 1 3 1 2 3]
~~Then 2 parents are~~
Then their children are generated from crossover
eg c_1 = [3 2 1 3 1 2 1], c_2 = [3 2 2 2 2 2 2]

All children for the generation are added to the next population array created for all generations. At the end the best solution is selected based on the minimize fitness value.

Question (05)

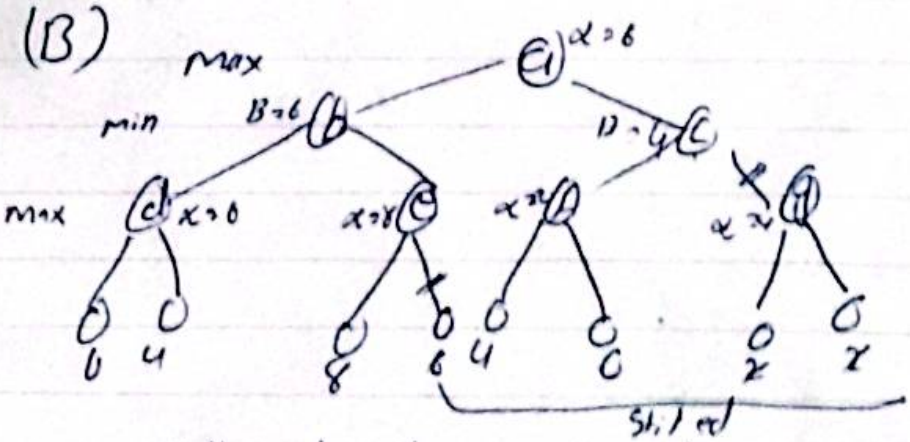
(A) Max



winning path is a → c → g a label

No path get pruned

(B)



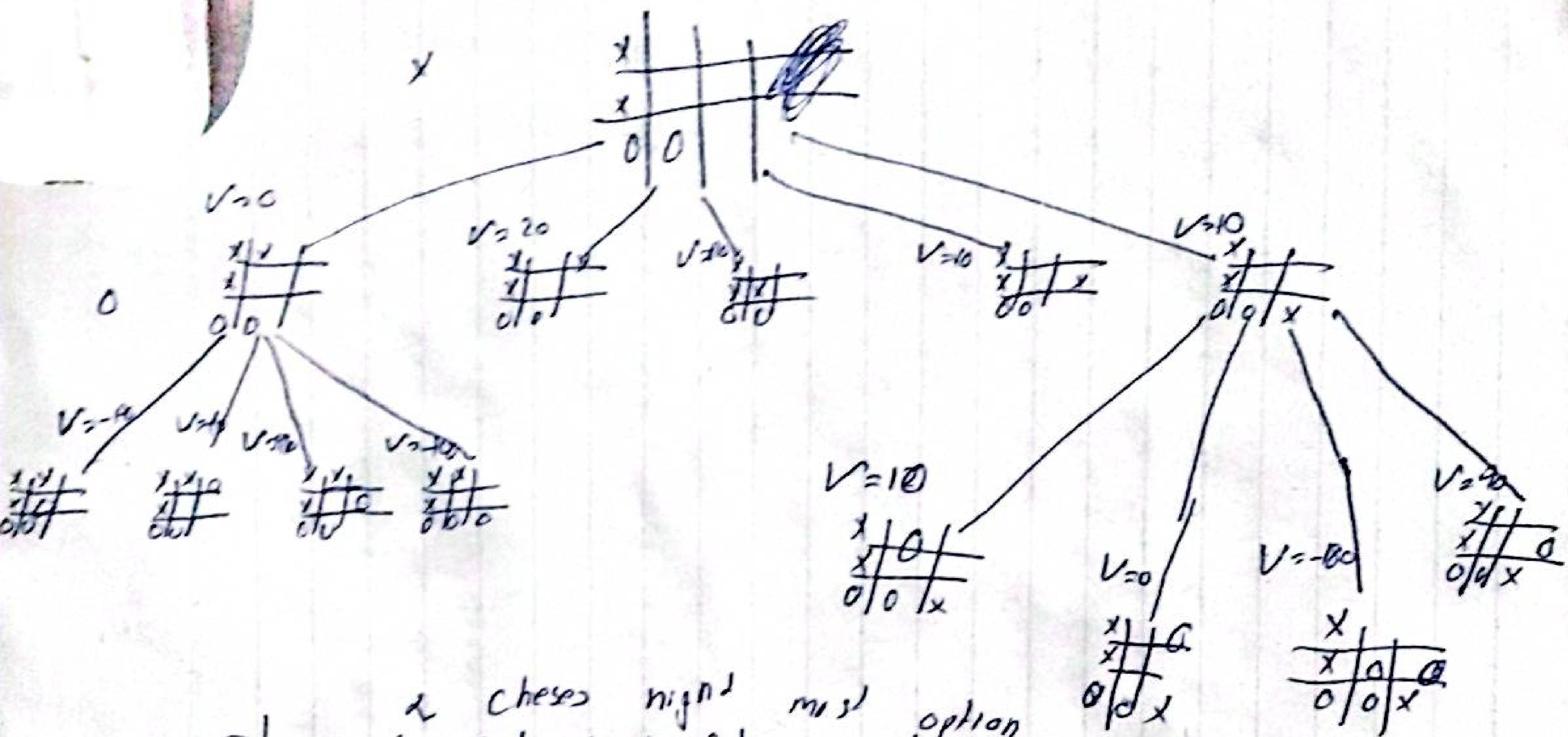
Path = a → b → d → g label

2 path not pruned

e is with sub tree

c is right sub tree

Question (05)



x cheses right most option to geto best state-eval. Evalution is value

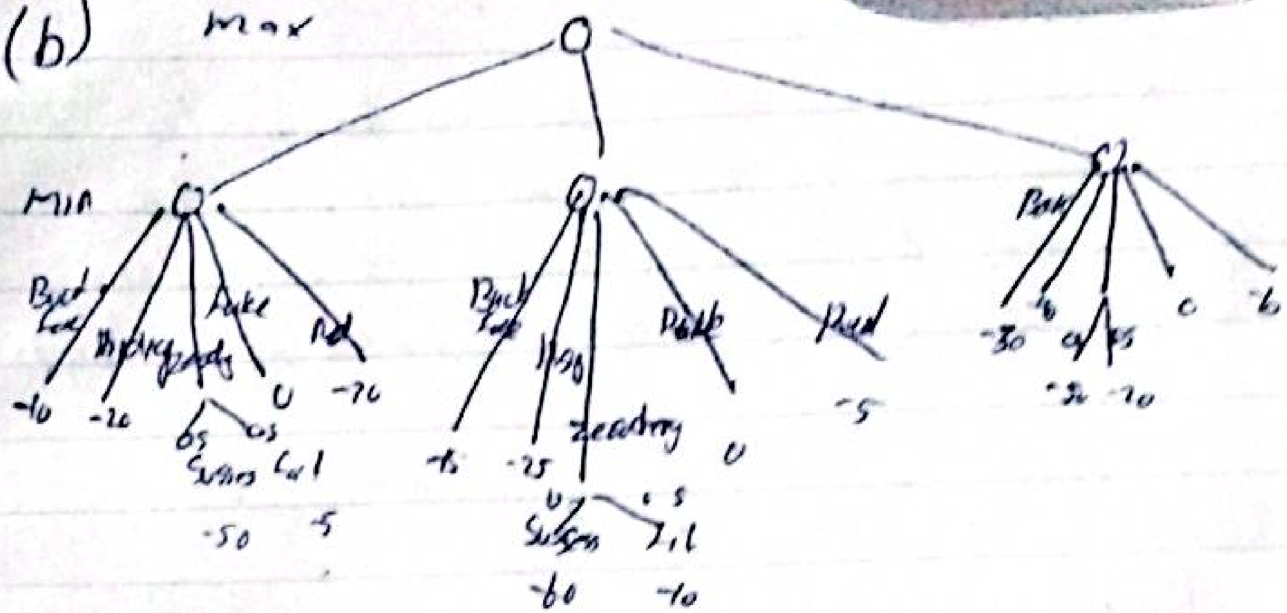
Q6) a)

1) players are the defender aims to Attackers. The defender aims to maximize theirs score by increasing time to maximise their strate on the system.

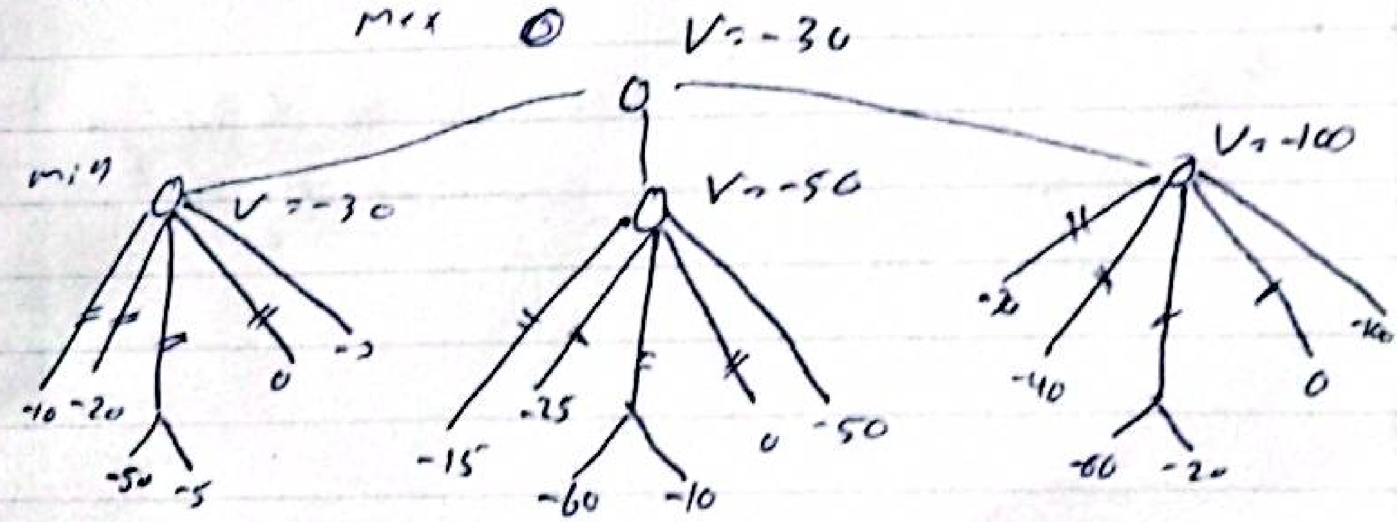
2) The decision of each player would be pick a move such that their adversary is forced to pick a not so good move i.e maximize their score but minimize opponents, e.g attacker would not its position i.e force opponent to pick a bad move

3) in non stochastic scenarios, the attacker would have a single deterministic strategy to rely on but with the introducing, the defender now has to consider option by used of probabilities

(b)



c) ii)



best optio for decide is deploy [illegible] at cost -30

2)

Assuming Dual Attack causes the greatest damage, alter its condition, all other options are useless to [illegible] therefore all other forms of attacks are [illegible] (Seen in diagram above).

d)

1) expected value stand = -5×0.5 + -5×0.5 = -.25
expected value [illegible] poker = -10×0.5 + -10×0.5 = -10
expected value wild game = -5×0.5 + -20×0.5 = -5[illegible]

2) The strategy for [illegible] would be to use the expected value as shown on the [illegible] as done normally