AI QUIZ 1
Answer Key

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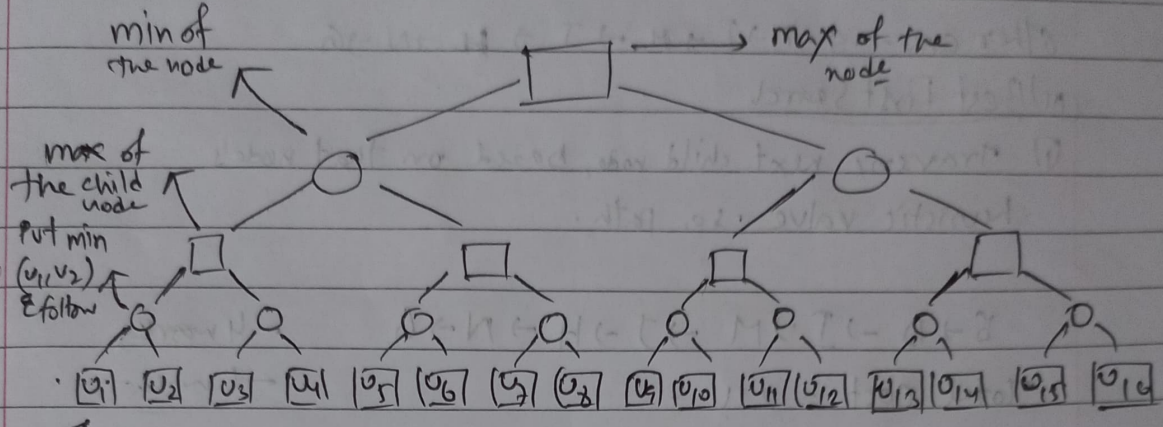
Q1 soln

1 (I) Firstly, Through the mYUtilities Two Player Game1.m matlab function generate 16 values through input of student ID.

Now.



16 values obtained from matlab function to be put.

So, correctly 16 values generated : = 4 marks
correctly to calc./found minmax value/root - 4 marks — Total 8

(II) Since, firstly number of nodes generated (without αβ pruning, gener case) = 15 nodes — -1 marks

~~Nodes generated using DFS while searching~~ :

2 (I) Uniform cost search:

(i) In this process, only child node with min weight will be traverse
(ii) Backtracking possible.
(iii) Same node can't be visited twice.

Path

$S \xrightarrow{25} D \xrightarrow{32} A \xrightarrow{36} H \xrightarrow{44} N \xrightarrow{42} G$ ⇒ 4 marks

Also, $S \xrightarrow{25} D \xrightarrow{32} A \xrightarrow{11} B \xrightarrow{42} K \xrightarrow{27} N \xrightarrow{42} G$.

Total Path cost = 179 — -1 marks

(ii) Hill Climbing

→ In this next state should have better heuristic value to proceed. and no backtrack

Path = $S \xrightarrow{140} D \xrightarrow{120} I \xrightarrow{100} M \xrightarrow{70} P \xrightarrow{50} \otimes$ = 5 marks

P dead end and no backtrack

Other ans = S → D → I → M → J → ~~H~~ → N → G

(iii) Best First Search

(i) Traverse next child node, based on that node's heuristic value. so, path.

S → D → I → M → J → H → N → G — 4 marks

~~Total cost = 21~~

(iv) A*

(i) $f(N) = g(N) + h(N)$ — estimation

S → D → A → B → K → N → G — 5 marks