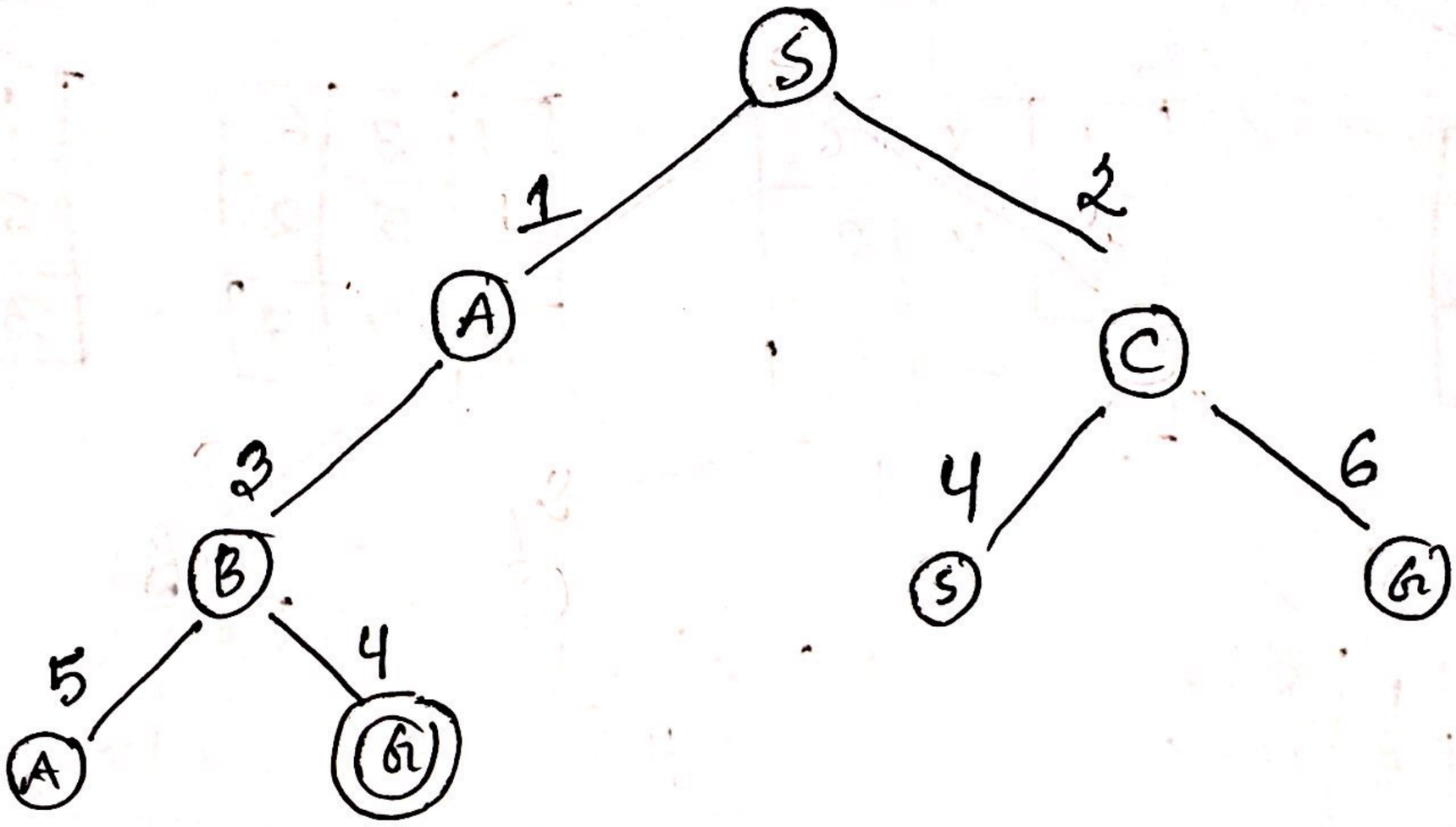
Summer 2021

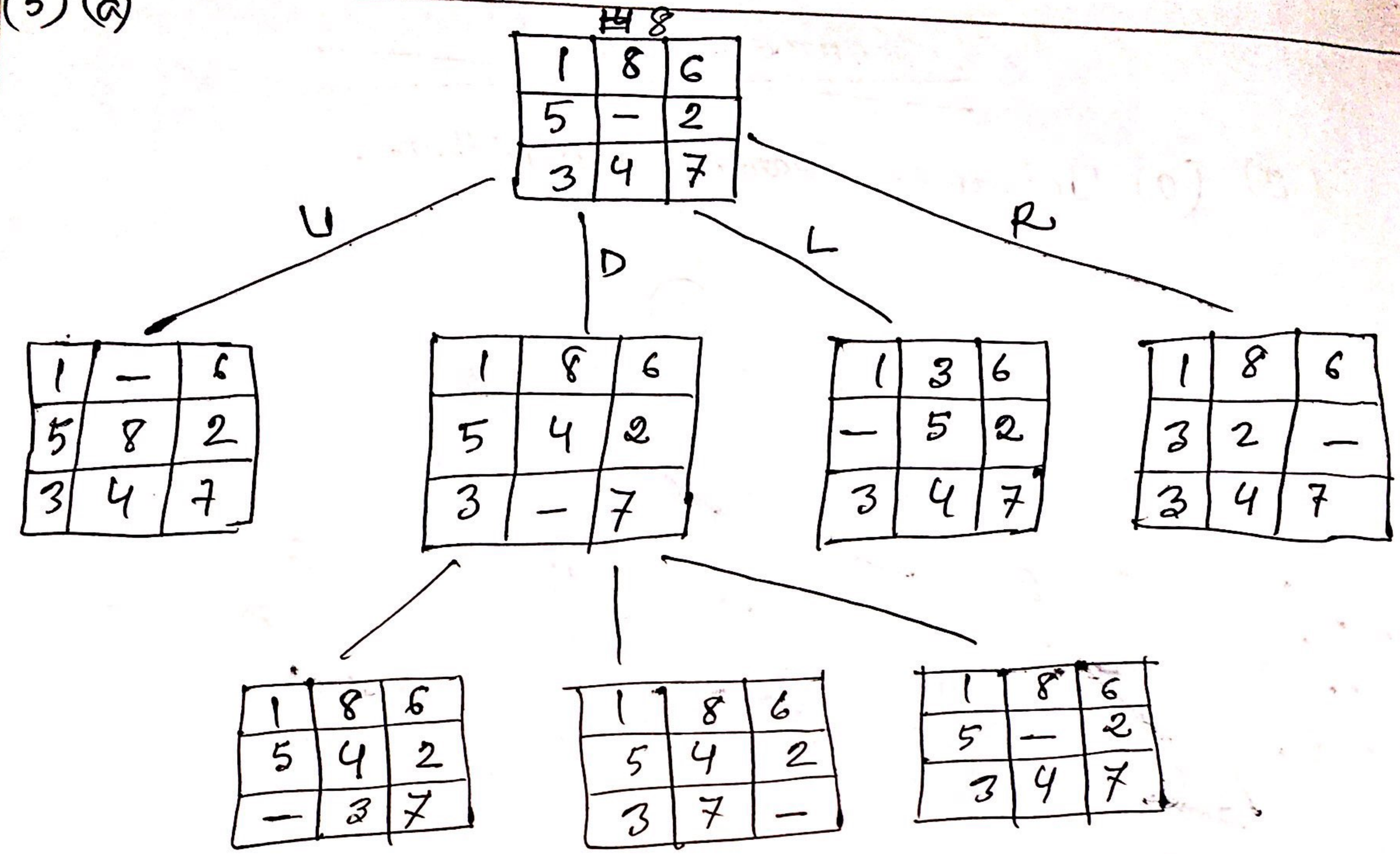
(3) (a) Uniform Search algorithm.



Solution path : S - A - B - G

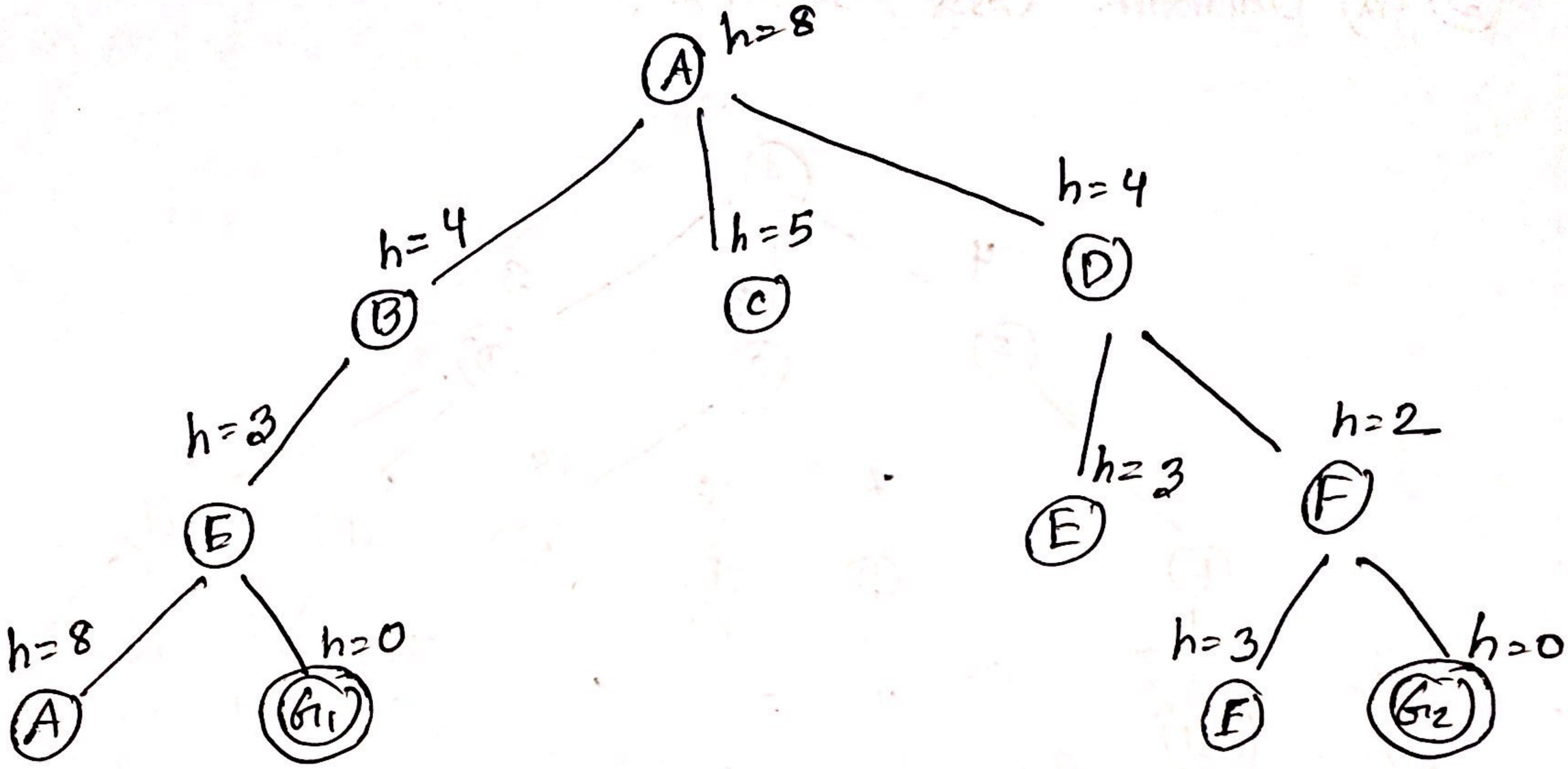
Costs : 4

(5) (a)



(b) For $T=0$, simulated Annealing behabes like First choice hill climbing. if $T=0$, then the probability chosing bad node is undebined because the algorithm always choose better node. which is similar to First choice hill climbing.

(3) (a) (b) Greedy Best First Search



path: A - B - E - G_1

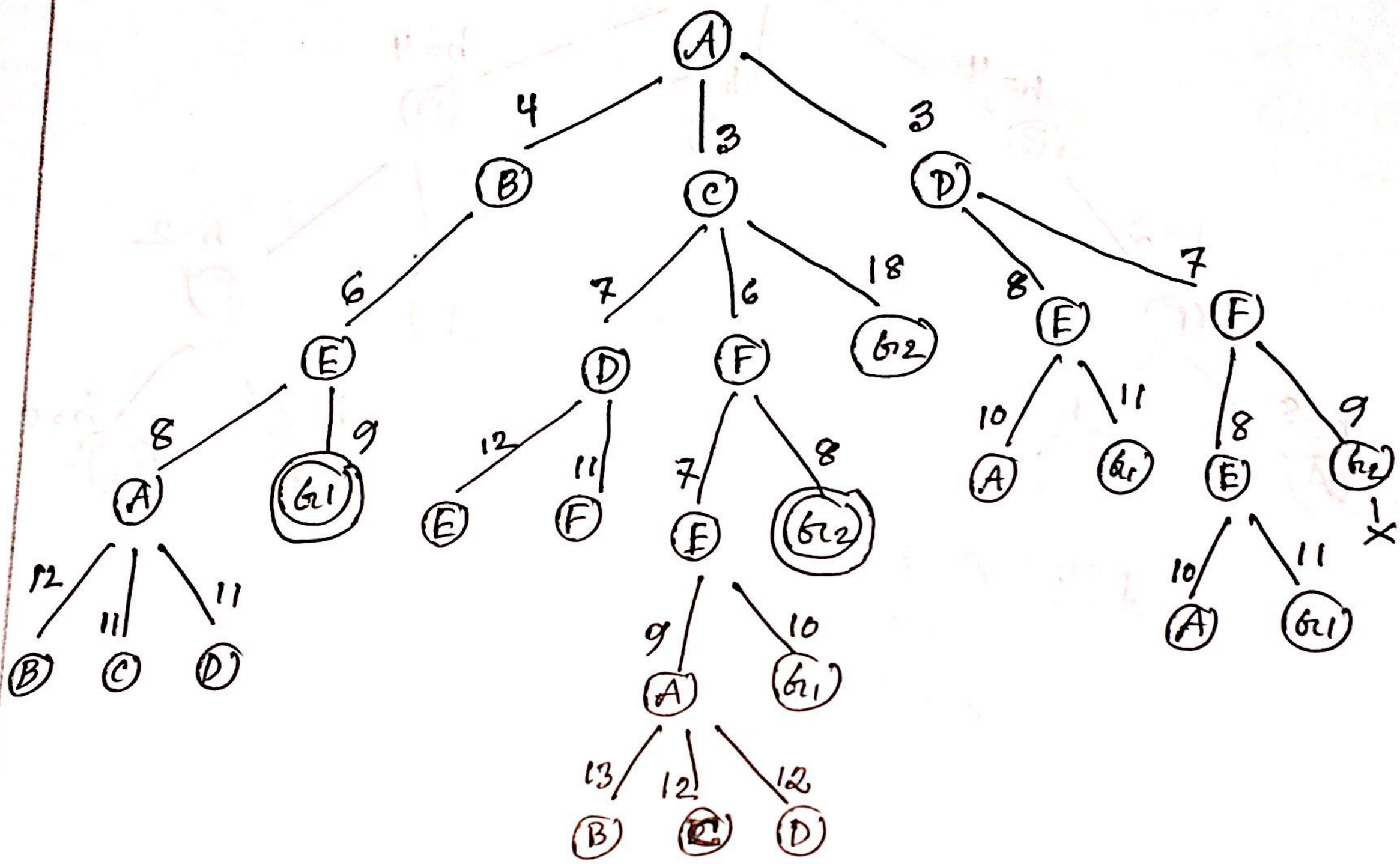
Cost = 9

A - D - F - G_2

Cost = 9

Fall : 2021

(3) (a) Uniform Cost Search.



Path: $A - B - E - G_1$

Cost : 9

$A - C - F - G_2$

Cost : 8

2

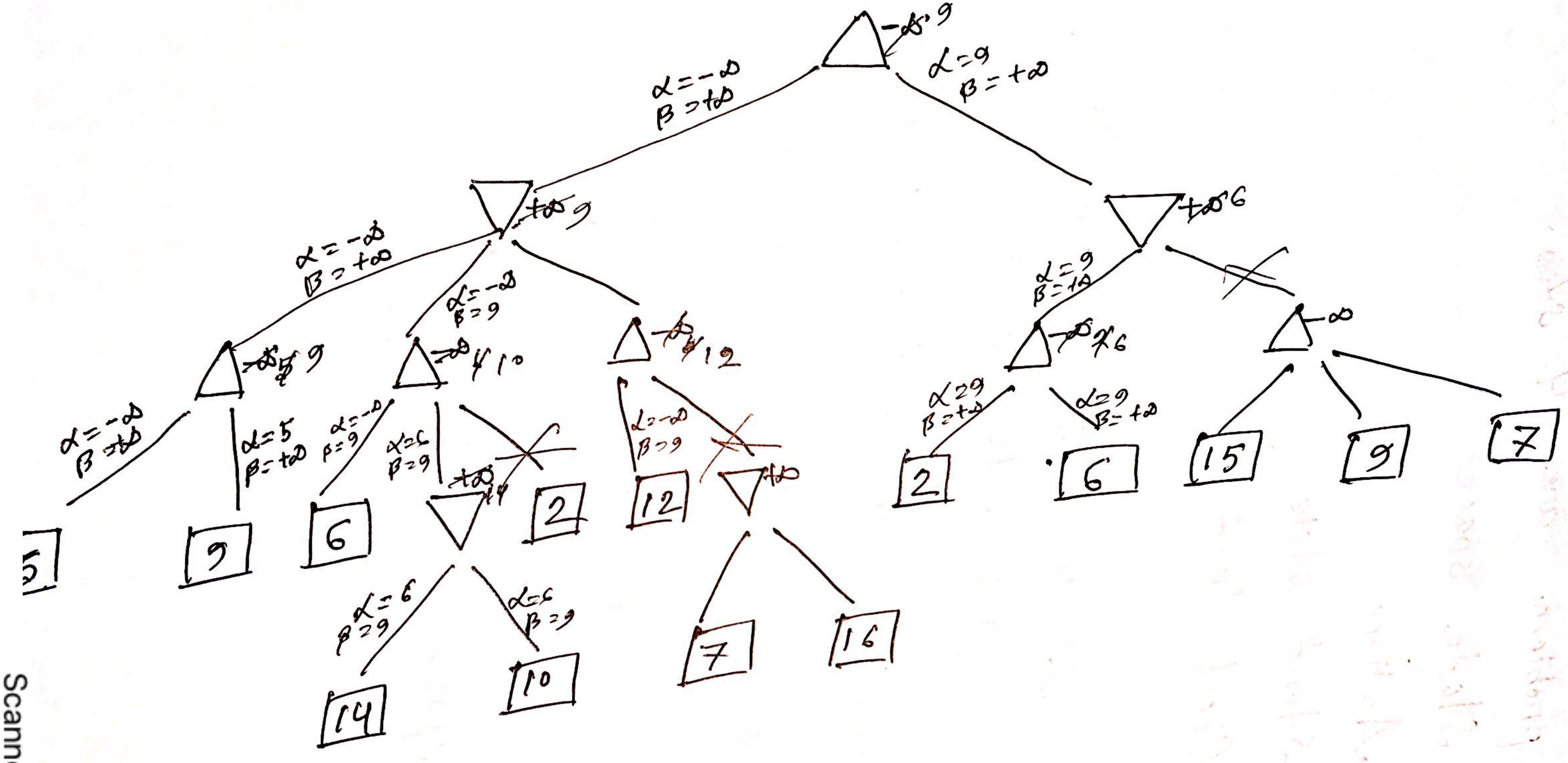
Search problem are 4 step.

(1) State space
(2) Action
(3) Start state
(4) Goal test.

- State space: All small squares of the grid. 16 location.
- Action: Move up, down, left, Right.
- Start state: South east corner.
- Goal test: No prize in the board.

State space size $= 4 \times 4 \times 2^3$

$= 128$.



(5) (a) $h_1 = N - x$

h_1 is admissible.

Because, h_1 is less or equal to N.

$h_1 = (N-x) \leq$ true cost.

(b) ~~$h_2 = max$~~ h_1 and h_2 admissible, $h_3 = (h_1 + h_2)/$

h_3 is $h_1 < h_3 < h_2$,

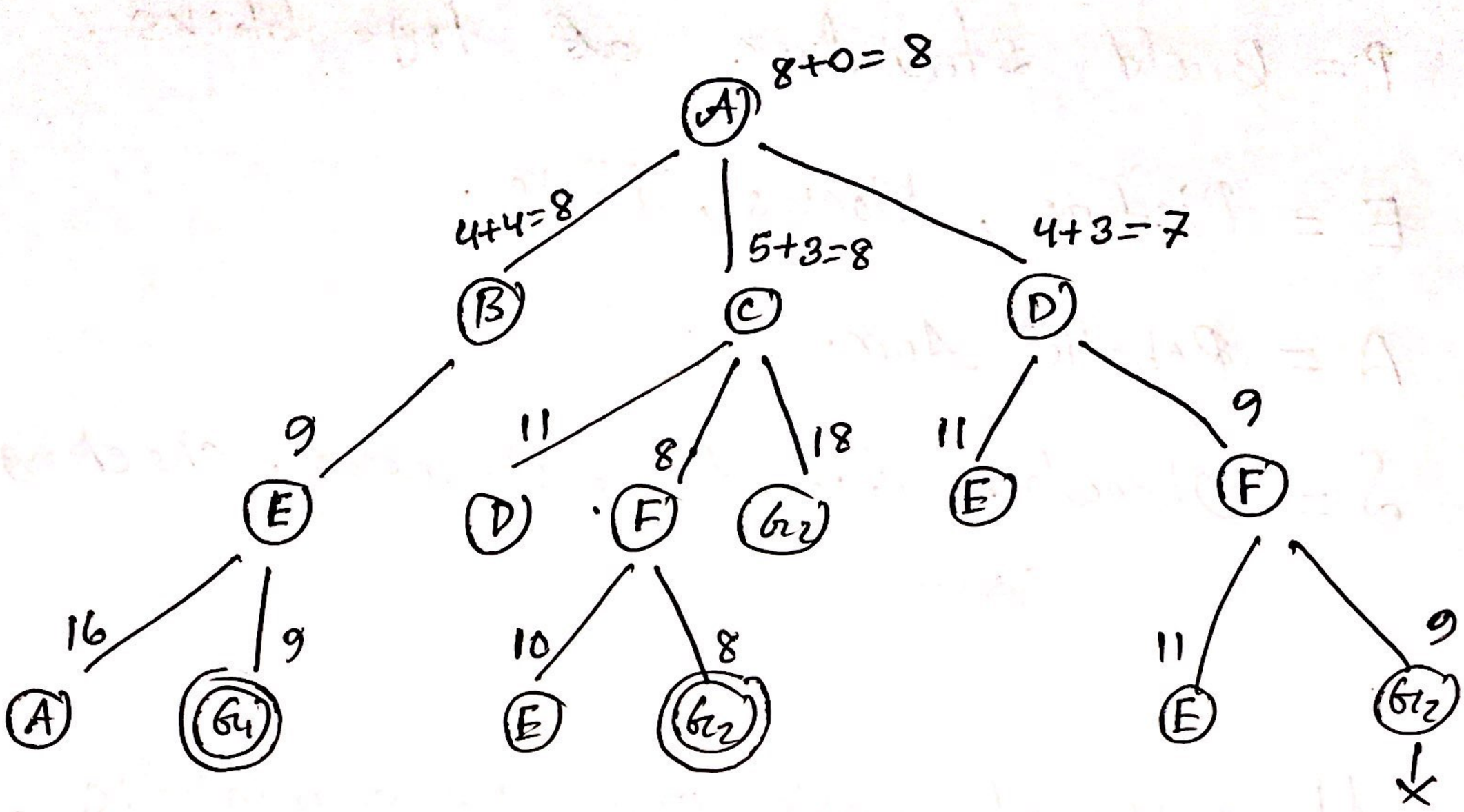
$\therefore h_3$ is admissible.

(c) h_2 is more closen to true cost.

$h_2 \geq h_1$

So, h_2 dominate h_1.

(c) A* tree search



path: A - B - E - G1

Cost = 9

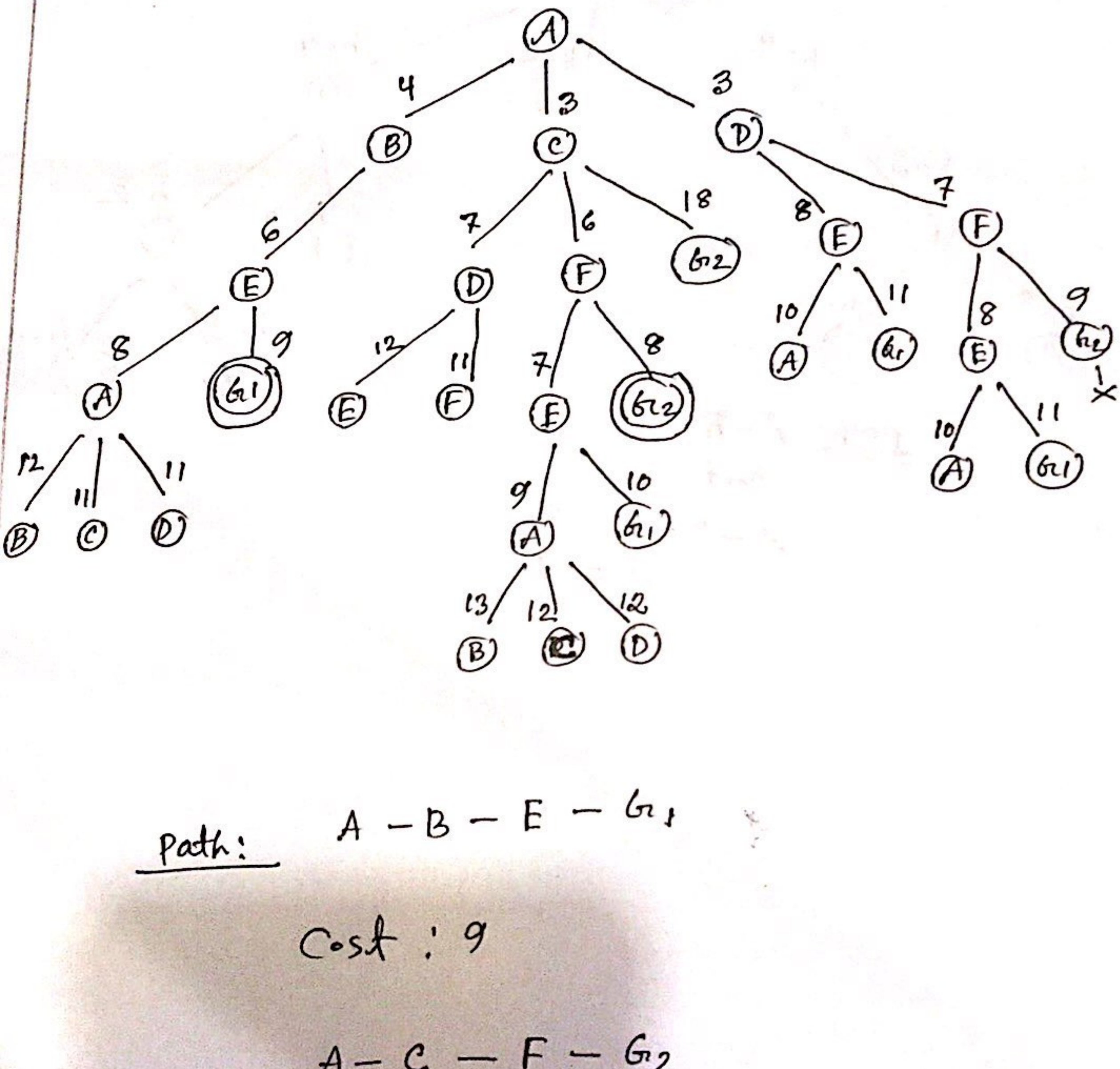
A - C - F - G2

Cost = 8

Spring : 2022

Fall : 2021

(3) (a) Uniform Cost Search.



Path: A – B – E – G_1

Cost : 9

A – C – F – G_2

Cost = 8

(6)

1) Determine the PEAS specification for the agent.

P = Build structure of logo blocks.

E = Pictures, blocks, Table.

A = Robotic Arm,

S = Objector detector, Camera, checking Sensor.

It Fully observable and Deterministic, Sequential and static.