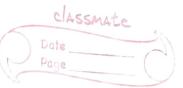
lage- (1.)

MOL Name: - Divyansh Tiwari Roll No: - 2020111002 Assignment - 2 Note: - Page Now are written on top of each page.) (O.1) Express path cost). (1) (Holding cAl: the block A is held in robot's arm (2.) Emply (a): the roboto arm is emply. 3. Ontable (A): the block A is kept on the table. a. On Block (A, B): the block A is on block B. (5) Char (A): there is nothing on top of work A · Adions: (1) Pick UP (A): the robot's arm picks up but block A. 2 Pert Down (A): block A is put down on the table at a fue space. (3.) Put on (A,B): put belock A on block B. (a.) Remove (A, B): remove block A from the block B.

· Goal state: The goal state is the configuration that is needed to be achieved.

· Initial State: The given configuration is the initial

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let a unit cost is charged (equal to 1) for moving a block from one position to another.

That Therefore,

Path cost

3) \(\)

The optimal solution is the case with the minimum from from the initial state to go the initial state to

(1) Given the following - - - - 3 éteration each:

Tribal state: - [C]

Final state: - [A]

C

2nd. ikration:- [C AB, AB, AB, AB, AB]

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3rd - iteration -: configuration [c] is already visited.

: une ship et le mone to the most config. Depth-first:
1st-itivation:
[A, AB, ABC, AB, AB] b) Depth-first:-2nd iteration: B C C C C AB AB AB AB AB 3rd - iteration: Node (B) is already visited en our DFS .. we skip et a nove et to reset redi, Also, Node (c) is also visited earlier a this . we go on next rade which lumes (ABC) B B C C A A C C

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	2) Uniform march!
	No. of Maps required to reach the config. = cost
	1st iteration: - [ccccc AB, AB, B, CAB])
	LAB, AB, B, CAB
	cost: 10011
	erd iteration:
	A A Nodu
	ABC, AB, AB, B, AB, AB, B, LAB) have
Wat:	lee fore have
	lun stippe
	Now, on removing all the nodes which have been
	visited lectore:
	3rd iteration: - Cost 1 1
	B, BA, ABC)
	(DIF ' 1 1

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O.3) terristic 1:- All the blocks which are not in their correct position as per the goal state are counted. Those which are in robot's arm are not counted.

Huristic 2:- we calculate the distance better between the current , had of block a the final state of block while looking at the details of each block.

Example: initial state! final state:- (C)

According to huvistic (1), A& c are at encounced position 2) court = 2.

According to hurristic @ According to final state, A is allowe B 2 below (I it is seen that is a can at incorrect position => count = 2.

For 1, so block is at the top => 1 is added. For B, block allow it does not match => 1 is added Page - 6.

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(A) Initial State: (A)

(A)

(A) Ving huvistic () 1st iteration! - [B (A, AB, ABC, AB, AB) (a)t: 3, 3, 2, 3 Expanding the rade with the cost = 2. 2nd idention: Lost: 1, 2, 2, 3, 3, 2, 2, 2, 2, 3, 3, 3, 3 Removing all the visited node (expanding with cost=1) 3rd iteration 's B B B C C A A C ALB, AL, C, AL, AC, AD, AB, BC, BC, A (a)t:-2,1,0,1,2,3,3,2,2,3