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Question 1
Question 2
Question 3
Question 4
Question 5

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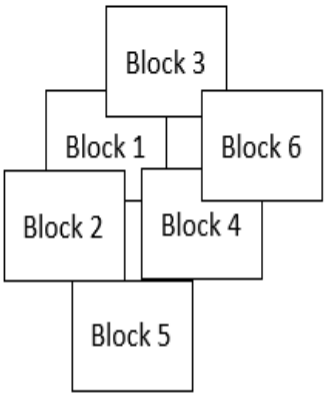
Qtext:-

[3+3+2=8 Marks]

In the block world observe below that block 2,3 & 4 are placed on top of Block 1. Block 6 is positioned on top of blocks 3 & 4. Block 5 is adjacent to blocks 2 & 4. The blocks positioned one over the other or those which are adjacent are directly reachable from one another. The task is to assign color encoding to each of the blocks from the set {Red, Green, Blue} such no two directly reachable blocks must have the same color codes.



a. If local search and/or evolutionary algorithm is expected to be used to solve the problem, propose your design of the most appropriate fitness function to suit this problem. Does your design aim global maxima or global minima?
b. Using the results of part a., apply hill climbing algorithm only for first three iterations (first three goal tests). Depict all the steps of the search algorithm clearly. You may represent a state with {Variable= Value, ...} format instead of drawing the entire block configurations.
c. If evolutionary algorithm is expected to be applied to above problem, briefly explain your choice of solution design w.r.t to any evolutionary algorithm with example.