CS 470 AI Winter 2016 PRACTICE QUIZ on "PLANNING VIA STATE SPACE SEARCH" Name = __**SOLUTION**_____

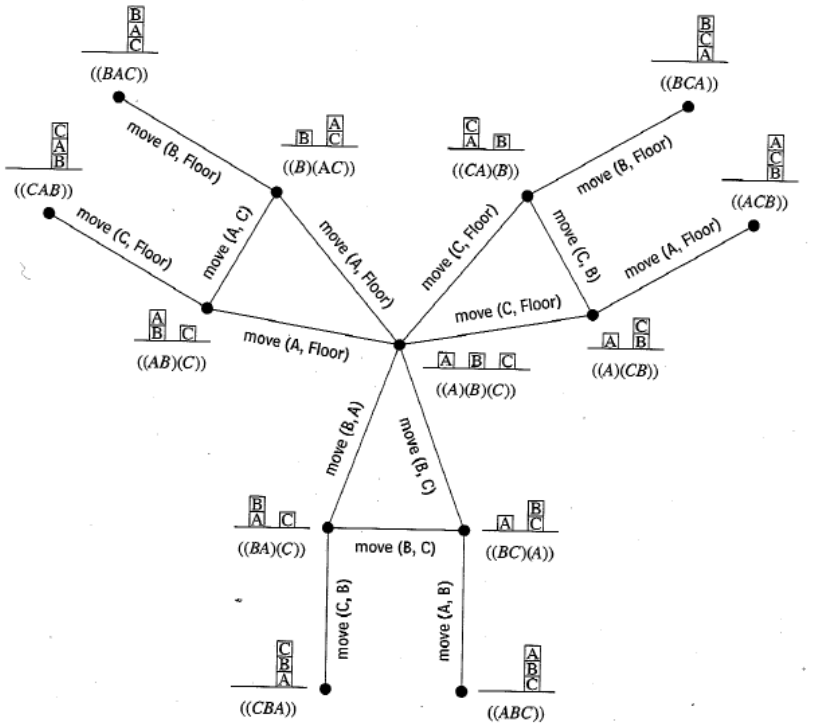
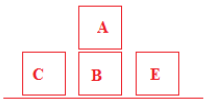


Figure 7.2

A State-Space Graph

Questions based on Figure 7.2 above:



(1) Draw a visualization of the world described by state ((C) (A B) (E)):

(2) Write the state descriptor for this state: ((1 8 7)(2 □ 6) (3 4 5))

(3) What is the operator (call to "move(x,y)") that will change ((CAT)) to ((C) (AT)) ? move(C, Floor)

(4) Note the undirected edges in Fig. 7.2 above. Is this "move" operator symmetric? Why or why no? No, the move operator is not symmetric because there is at least one example of a state S and a move operation that transitions from state S to another state S' from which the SAME move operation will NOT transition back to S. For example, "move(C,Floor)" applied to state ((CAT)) results in state ((C)(AT)), but the same move operator applied to ((C)(AT)) would NOT gie us back state ((CAT)); instead we would get state ((C)(AT)) again.