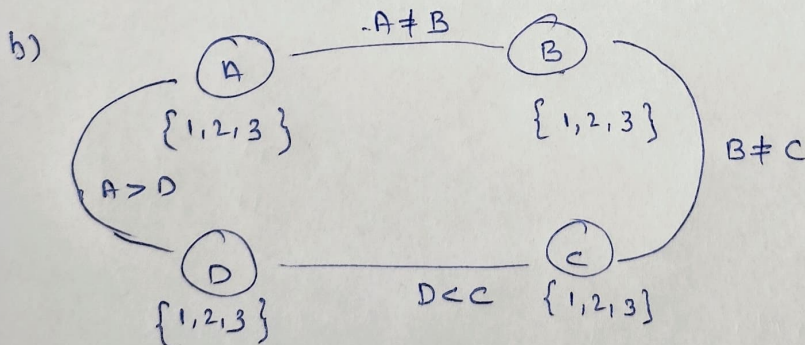46 Question

(a) The variables for the given problem are

A, B, C, D

Domain: It is the set of possible start terms for the respective task of each variable. In this case the start times 1:00, 2:00, 3:00.

constraints: The constraints that needs to be applied while solving the problem are

* A > D ; A must start after D

* D < C ; D must start before C

* A ≠ B ; A cannot execute at the same time as B

* B ≠ C ; B cannot execute at the same time as C

* C ≠ 2 ; C cannot start at 2:00

b)

A ≠ B

(A) ———— (B)

{1,2,3}   {1,2,3}

A > D   B ≠ C

(D) ———————— (C)

{1,2,3}   D < C   {1,2,3}

c) The arc consistency obtained by applying all the necessary constraints on csp is shown as below.

A —— A ≠ B —— B

A {2,3}   B {1,2}

B ≠ C

D —— D < C —— C

D {1}   C {1,3}

C ≠ 2