For the given problem, Let C_{xy} represents the connection being made from component X to Y, such that C_{12} means component 1 is connected to component 2. Here is the variable value and it is a Boolean such that if a connection is made between the two components it gets a value 1 and else, 0. For instance if there is a connection between component 1 and 2 , $C_{12} = 1$ else $C_{12} = 0$. Therefore dom(v) = [0,1]

Constraints are set such a way that there is at least one connection going from each component. It is represented as following:

$$C_{12} + C_{13} + C_{14} + C_{15} + C_{16} \geq 1$$
$$C_{12} + C_{23} + C_{24} + C_{25} + C_{26} \geq 1$$
$$C_{13} + C_{23} + C_{34} + C_{35} + C_{36} \geq 1$$
$$C_{14} + C_{24} + C_{34} + C_{45} + C_{46} \geq 1$$
$$C_{15} + C_{25} + C_{35} + C_{45} + C_{56} \geq 1$$
$$C_{16} + C_{26} + C_{36} + C_{46} + C_{56} \geq 1$$

Also, to make sure that all the components are connected we need at least 5 connections in the circuit. This is formulated using the constraint: -

C12 + C13 + C14 + C15 + C16 + C23 + C24 + C25 + C26 + C34 + C35 + C36 + C45 + C46 + C56 >= 5

Objective function is given by: -

Minimize: 67*C12 + 52*C13 + 28*C14 + 56*C15 + 36*C16 + 57*C23 + 73*C24 + 51*C25 + 32*C26 +34*C34 + 84*C35 + 40*C36 + 80*C45 + 44*C46 + 46*C56