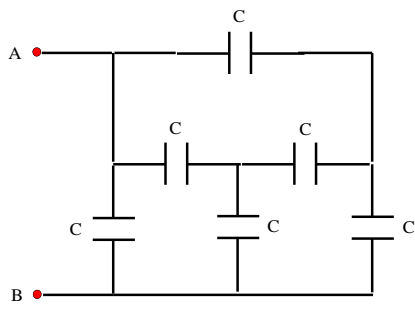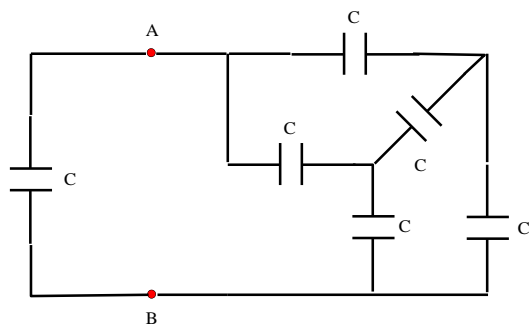Find the equivalent capacitance C_{AB} of the circuit as shown in the figure.
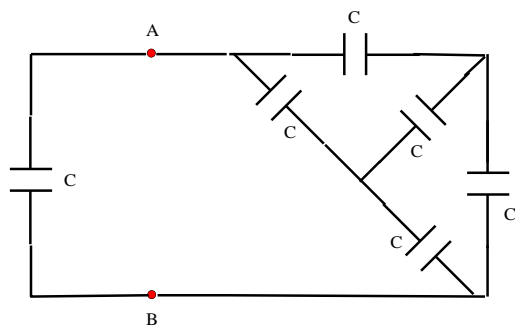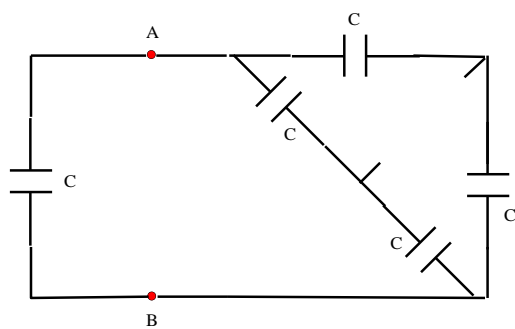

Solution

The circuit can be redrawn as,
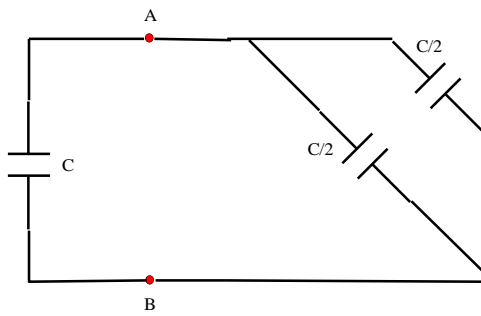

Redrawing further,

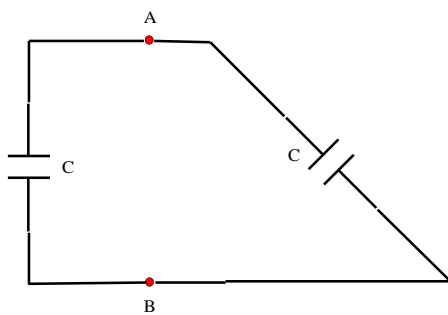The right-side capacitive network can be further simplified as,

(Due to symmetry the capacitor that won't be charged has been cut. The detailed proof of such situation is available in the capacitors topic in study material.)

Further we have,

Which reduces to,

Hence, 2C