Puzzle – 26

Q- Bridge and Torch Puzzle

The scenario comprises of a wobbly bridge and four people. It is the night time and the people have only one torch. Without torch one may risk his life in crossing the bridge. Also we have a condition; the bridge is not quite strong and can hold only two persons together at one.

The four people take different time to cross the bridge - 1 min, 2 min, 7 min and 10 min.

Since the torch is a necessity and the bride can't hold more than two persons at a time, two persons must travel at a time out of which one must return with the torch so they don't risk their life crossing in the dark.

What is the shortest time that will be required for all of them to cross the bridge?

My Approach and Solution –

Normally, people would think to send every person with the person who takes 1 minute to cross the bridge, but that is not the optimal approach as it would take =

10 + 1 + 7 + 1 + 2 = 21 minutes.

Whereas if there was a way if we could club the person who takes 10 minutes and the person who takes 7 minutes to cross the bridge then, it would be much easier.

So, what I propose is sending 1 min person and 2-minute person together at first. Then the 1-minute person return with the torch and now 10-minute person and 7-minute person go together. Then the 2-minute person returns and take 1 minute person with him resulting to a total time take to be =

2 + 1 + 10 + 2 + 2 = **17 minutes.**