Answer:

T1 can fill an empty tank in 20 minutes

T2 can fill an empty tank in 15 minutes

At 1 minute T1 fills up 1/20  
At 1 minute T2 fills up 1/15

Tap T2 fill the tank in 10minutes = 1/15 \* 10 = 2/3

Both the taps while working together filled the tank upto 1 - 2/3 = 1 / 3

Both the taps one minute work = 1/20 + 1/15 = 7/60

7/60 part of the tank is filled by both the taps in 1 minute

1/3 part will be filled 60/7 \* 1 / 3 = 2.8571428571 minutes [answer]