1) Obtain the flip-flop output Boolean functions equations on circuit shown in Fig. 1($Q=T\oplus q$, $Q(t+1)=T\oplus Q(t)$)
2) Fill in the timing diagram shown in Fig. 2 using the Boolean functions that you obtained.
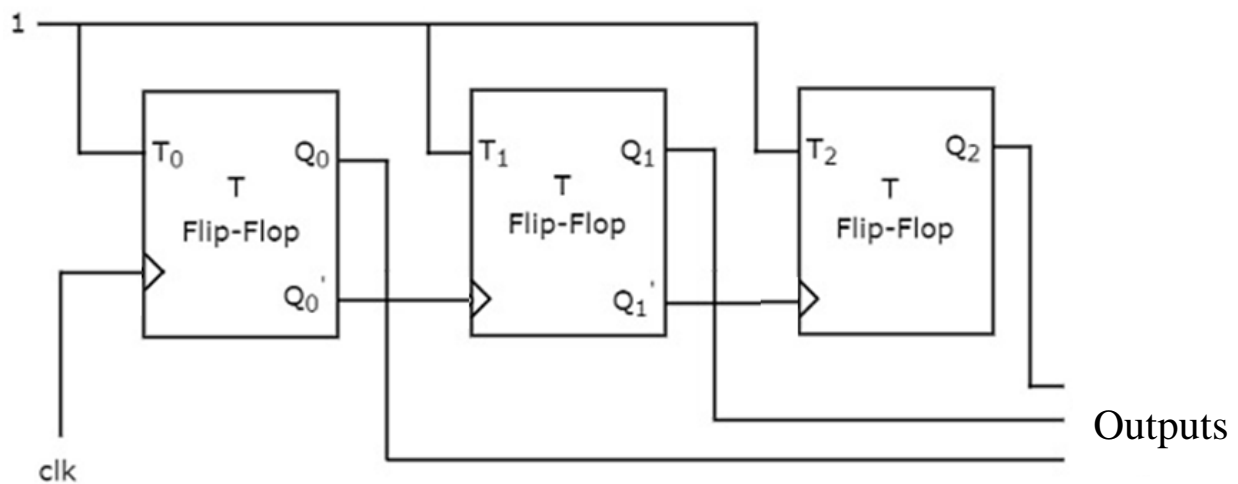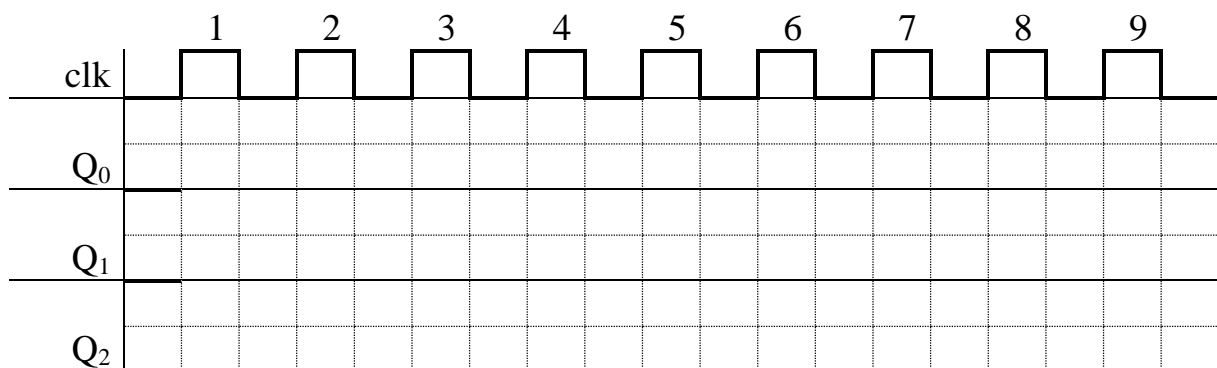3) State the task performed by this circuit by using your finding.



**Figure 1**



**Figure 2**