1. Given in Figure 1 are the wiring diagram of a gene regulatory network and complete state transition table defining the network. Show, step by step, the result of running the REVEAL algorithm to learn the Boolean network.

![Wiring Diagram and State Transition Table](image)

Figure 1: (a) The wiring diagram of a simple gene regulatory network. (b) The complete state transition table defining the network.

2. Describe a (qualitative) Petri net for the following system of reactions, and give an initial marking that makes the system live. Further, determine and interpret the minimal P- and T-invariants.

\[
\begin{align*}
\text{r1: } & 2C \rightarrow A + 2B \\
\text{r2: } & 3A + 2B \rightarrow 2D + 2E \\
\text{r3: } & 3D + 3E \rightarrow 3A + 3C
\end{align*}
\]