

**Q1.** Small sized LUTs can implement big-sized functions. Using only 3-input, 1-output lookup tables (LUTs), implement the circuit using minimum number of LUTs. Do not simplify the gate-level circuit before mapping it to LUTs. How many LUTs are required to implement the design? Using the truth table approach, show the inputs and output of each LUT. If any input is not used, mark it as “X”.

[6]

