



Sabaragamuwa Provincial Department of Education-
Weekly School

Subject – Information and
Communication Technology

Week- Jan - 2

Grade - 12

Prepared By- Zonal Education
Office,Rathnapura.

There are three switches, named P, Q, and R, in a machine designed to play as a musical instrument. These switches are in, either “ON” or “OFF” status. On and Off states are logically expressed by 1 and 2 respectively. Instrument creates sound when Q switch is on and at least one other switch is on.

- i. Construct a truth table to represent the above scenario.
- ii. Write the Sum of Product expression for above truth table.
- iii. Simplify above boolean expression by using Karnaugh map.
- iv. Construct a logic gate circuit for the simplified boolean expression you get in section (iii).