SLIIT UNI
THE KNOWLEDGE UNIVERSITY

Faculty of Computing

Year 1 Semester 1 (2024)

IIT1140 – Fundamental of Computing Lab Sheet 04

Objectives:

1. *To understand the behavior of Adder circuits.*
2. *To understand the design of Adder circuits and multiplexers.*

Activity 01:

a) **Design the following circuit in MM Logic and write the truth table. Copy your answer to the submission file.**

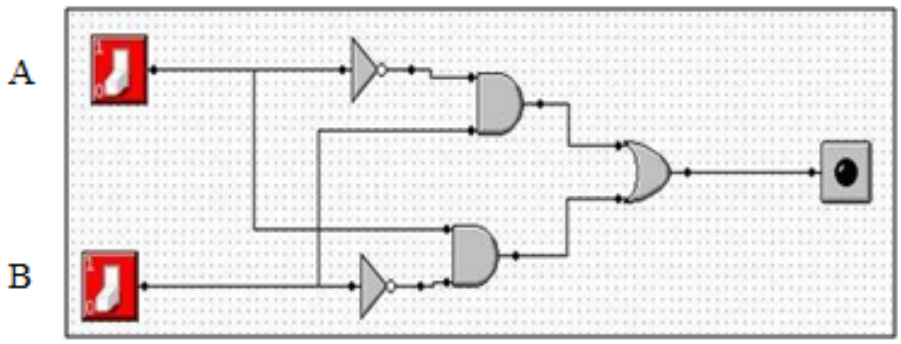

Figure 4.1

b) **Draw the circuit for P XOR Q and write the truth table for them.**

c) **What is the similarity between the XOR circuit, and the circuit designed in (a) ?**

Activity 02:

a) **Design the circuits given in figure 4.2 and 4.3 in MM Logic. Copy your file to the submission file.**

b) **Identify the names of the circuits designed in (a) and list the purpose of them.**

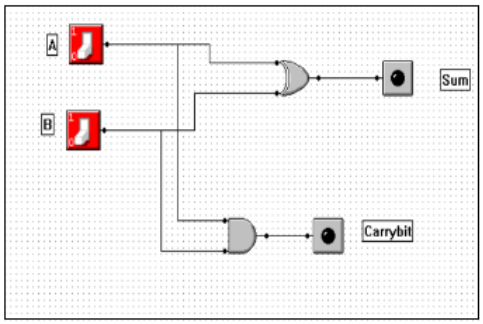

Figure 4.2

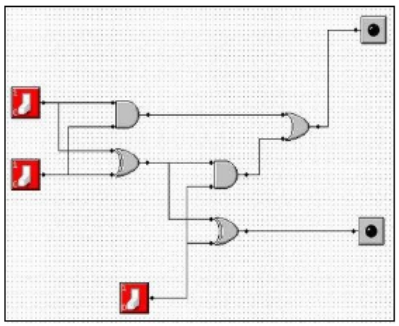

Figure 4.3

Activity 03:

A multiplexer (or MUX) is a device that combines several analog or digital input signals and forwards them into a single output line. A multiplexer of 2n inputs has n select lines, which are used to select which input line to send to the output.

a) **Design the following MUX circuit in MM Logic and observe its behavior**

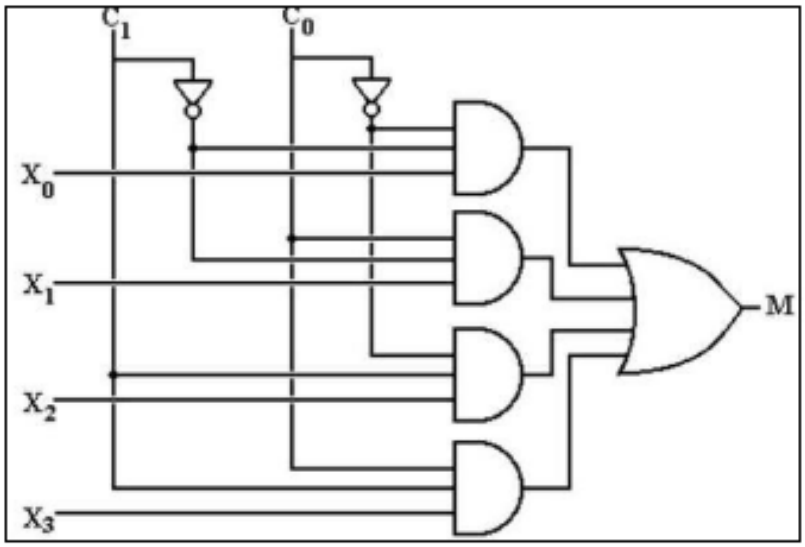

Figure 4.4