Subject - Information and Communication Technology

Grade - 8

Month - September **Week** - 04 **Activiti No:** - 36

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5 – Physical Computing

5.4 Preparation Of Circuits By Logical Gate Combination

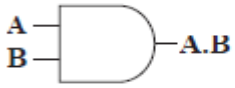
Student work –

- Study the lesson carefully. (Page 60 of the Reading Book)
- Study the following notes carefully.

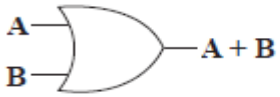
Basic logic gates

1. AND
2. OR
3. NOT

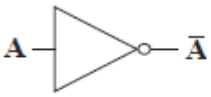
- Inputs given to those gates produce relevant output.
- Function of AND gate



- Function of OR gate



- Function of NOT gate



- Ask an adult / teacher to understand difficult lessons.
- Learn lessons related to the lesson through online or printed learning aids.
- Do the activities mentioned in this worksheet and the activities mentioned in your reading book and workbook related to this lesson.
- Discuss and find solutions to your problems while doing activities with your friends, elders and teachers.

Learning-aids that can help with this lesson –

- E-nenapiyasa - https://www.enenapiyasa.lk/lms/pluginfile.php/15435/mod_resource/content/1/nandGate.html

  https://www.enenapiyasa.lk/lms/pluginfile.php/15439/mod_resource/content/2/norGate.html

- Guru Gedara - https://www.youtube.com/watch?v=f72i8fcnG5M
- Other -
  - Youtube - https://youtu.be/vn40IRHlRWI

    https://youtu.be/m9eIVFvKB4w

    https://www.youtube.com/watch?v=NrUgMWvG-1U

    https://www.youtube.com/watch?v=3blG7nyxL5M

Learning outcomes through this lesson –

- Gates combine to create integrated circuits (NAND GATE, NOR GATE).
- Reveals solutions for circuits designed with gate combinations.
- Reveals the following about logical gates.

Note - Logic Gates

1. The basis building block of Central Processing Unit (CPU) and other electronic devices and computers are logic gates. The basic function of the CPU uses logic gates.
2. Digital signals are used in digital computers. The significance of digital signals is that it has one value out of two, at a particular point in time (See Figure 1).

Figure 1 : Digital signal

3. Logic gates take digital inputs and provides digital outputs. The digital inputs and outputs take binary values. That means, the input and output are available only in one form of two states as 0 or 1.
4. Binary values can be represented using different methods. The most common method of representing is 0 and 1. They can also be shown represented as TRUE/ FALSE or HIGH/ LOW. In computer hardware, they are voltage values with 5V and 0V (See table 1).

Table 1 : Methods of representably binary values

1	0
HIGH	LOW
True	False
5 V (volt)	0 V

5. Computer uses AND, OR and NOT logic gates to process data. Logic gates take states 0 or1 as input and produce 0 or 1 states as output.

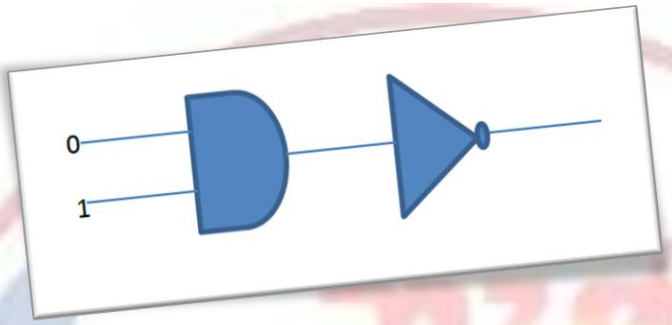
Evaluation / assessment methodology and model –

- Do the following interactive activities.
  https://www.enenapiyasa.lk/lms/mod/page/view.php?id=17994

  https://www.enenapiyasa.lk/lms/mod/page/view.php?id=25756

- Write the output of the circuits below.

1.



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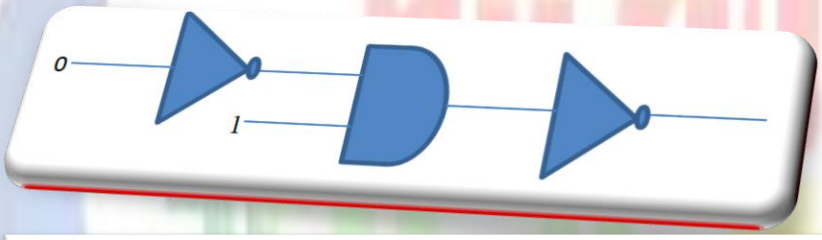

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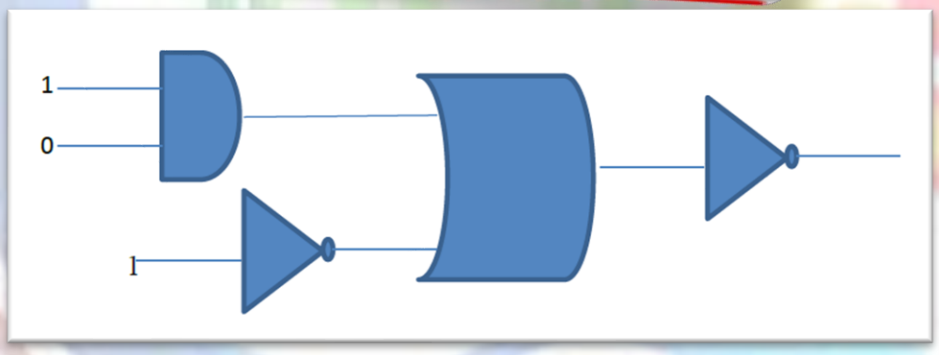

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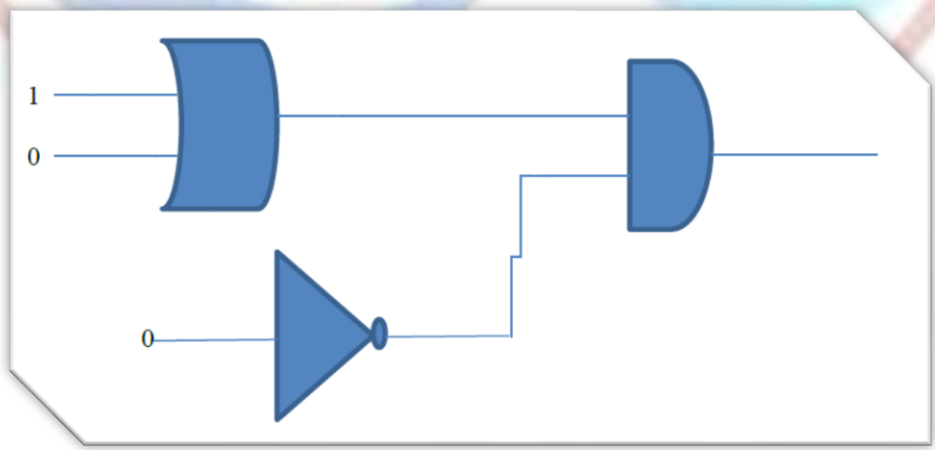

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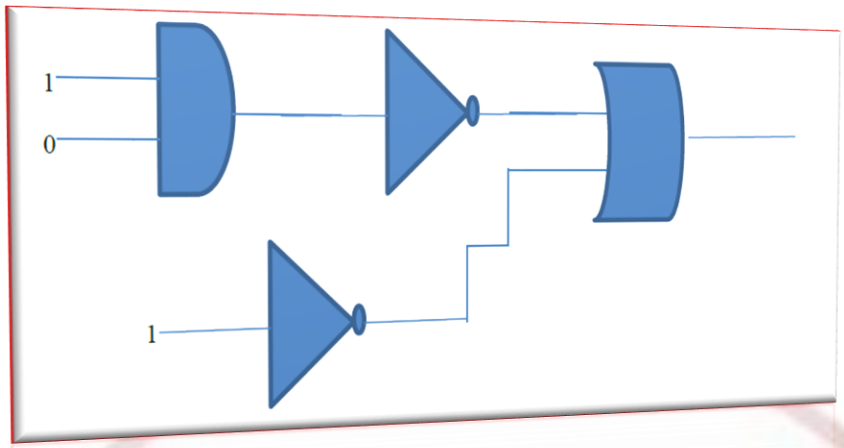

6.