PART 1

**AND Gate**

A blue line with text

Description automatically generatedTruth table:

|  |  |  |
| --- | --- | --- |
| A | B | Y |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

FIG – 1: Symbol of AND gate

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A computer screen shot of a diagram  Description automatically generatedAND Gate A = 0, B = 0, Y = 0 |  |
| AND Gate A = 0, B = 1, Y = 0A computer screen shot of a diagram  Description automatically generated | A electronic device with wires and switches  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generated  AND Gate A = 1, B = 0, Y = 0 | A electronic device with wires  Description automatically generated |
| AND Gate A = 1, B = 1, Y = 1A computer screen shot of a diagram  Description automatically generated | A close-up of a circuit board  Description automatically generated |

**OR Gate**

A blue line with text

Description automatically generated with medium confidenceTruth table:

|  |  |  |
| --- | --- | --- |
| A | B | Y |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

FIG – 2: Symbol of AND gate

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A screenshot of a computer  Description automatically generatedOR Gate A = 0, B = 0, Y = 0 | A white electronic device with blue and red wires  Description automatically generated |
| OR Gate A = 0, B = 1, Y = A screenshot of a computer  Description automatically generated1 | A close-up of a circuit board  Description automatically generated |

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A screenshot of a computer  Description automatically generatedOR Gate A = 1, B = 0, Y = 1 | A electronic device with wires and switches  Description automatically generated |
| A screenshot of a computer  Description automatically generatedOR Gate A = 1, B = 1, Y = 1 | A white electronic device with blue knobs and red and black wires  Description automatically generated |

**NOT Gate**

Truth table:

|  |  |
| --- | --- |
| A | Y |
| 0 | 1 |
| 1 | 0 |

FIG – 2: Symbol of NOT gate

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A screenshot of a computer  Description automatically generated  NOT Gate  A = 0, Y = 1 | A close-up of a circuit board  Description automatically generated |
| NOT Gate A = 1, Y = A computer screen shot of a diagram  Description automatically generated0 | A circuit board with wires and switches  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedNAND Gate A = 0, B = 0, Y = 1 | A close-up of a electronic device  Description automatically generated |
| NAND Gate A = 0, B = 1, Y = A computer screen shot of a diagram  Description automatically generated1 | A white electronic device with blue and red wires  Description automatically generated |
| SIMULATION | HARDWARE |
| NAND Gate A = 1, B = 0, Y = A computer screen shot of a diagram  Description automatically generated1 | A white electronic device with blue and red wires  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedNAND Gate A = 1, B = 1, Y = 0 | A white electronic device with blue and red buttons and wires  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedNOR Gate A = 0, B = 0, Y = 1 | A circuit board with wires and switches  Description automatically generated |

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A computer screen shot of a diagram  Description automatically generatedNOR Gate  A = 0, B = 1, Y = 0 | A close-up of a circuit board  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedNOR Gate  A = 1, B = 0, Y = 0 | A close-up of a circuit board  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedNOR Gate A = 1, B = 1, Y = 0 | A close-up of a circuit board  Description automatically generated |

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A computer screen shot of a diagram  Description automatically generatedXOR Gate  A = 0, B = 0, Y = 0 | A electronic device with wires and switches  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedXOR Gate  A = 0, B = 1, Y = 1 | A white electronic device with blue and red wires  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedXOR Gate  A = 1, B = 0, Y = 1 | A white electronic device with wires and switches  Description automatically generated |

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| A computer screen shot of a diagram  Description automatically generatedXOR Gate  A = 1, B = 1, Y = 0 | A white electronic device with wires and switches  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedXNOR Gate  A = 0, B = 0, Y = 1 | A electronic device with wires and switches  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedXNOR Gate  A = 0, B = 1, Y = 0 | A white electronic device with wires and switches  Description automatically generated |

|  |  |
| --- | --- |
| SIMULATION | HARDWARE |
| XNOR Gate  A = 1, B = 0, Y = 0 | A white electronic device with wires and switches  Description automatically generated |
| A computer screen shot of a diagram  Description automatically generatedXNOR Gate  A = 1, B = 1, Y = 1 | A white electronic device with blue and red wires  Description automatically generated |