Central Administration for General Education

Educational Computer Material Development Department

**Under the patronage of His Excellency the Minister of Education,**

**Mr. Mohamed Abdel Latif**

# Weekly Assessments for Programming and Artificial Intelligence for General Education (First Secondary Grade)

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## Weekly assessment

## First test

**First:**

**1. What is meant by "Logical operations", and how are logical values represented inside computers?**

**2. Define a "Logic circuit", and explain what a "Truth table" is and its importance.**

**Put (√) mark in front of the correct statement and (×) mark in front of the wrong statement:**

**3. The logical AND gate outputs a value of (1) only when all inputs are equal to (1). ( )**

**Choose the correct answer:**

**4. The logic circuit that outputs the opposite result of the input (the inverter circuit) is called the:**

**A) AND gate**

**B) OR gate**

**C) NOT gate**

**D) Half-adder circuit**

## Second test

**First:**

1. **Compare the logical AND gate and the logical OR gate in terms of the condition for obtaining an output equal to (1).**

2. **What happens to the output value (X) in the NOT gate when inputting the value (1), and when inputting the value (0)?**

**Put (√) mark in front of the correct statement and (×) mark in front of the wrong statement:**

3. **The logical OR gate outputs a value of (0) if one of the inputs is equal to (1) and the other input is equal to (0). ( )**

**Choose the correct answer:**

٤. **If the inputs of an AND gate are (A = 1) and (B = 0), then the value of the output (X) is equal to:**

- **A) 0**
- **B) 1**
- **C) 10**
- **D) Undefined**

# Third test

**First:**

1. **Write all possibilities of the truth table for the logical OR gate with two inputs (A, B) and an output (X)?**

2. **Explain how the AND gate works when two inputs (A = 1, B = 1) are connected, and what is the expected output in this case?**

**Put (√) mark in front of the correct statement and (×) mark in front of the wrong statement:**

3. **In computers, the number (1) is processed as a true value and the number (0) as a false value.** **(  )**

**Choose the correct answer:**

٤. **The logic circuit that outputs (1) if there is at least one input equal to (1) is the:**

**A) NOT gate**
**B) OR gate**
**C) AND gate**
**D) Inverter gate**

## Classroom Assessment:

**First:**

**1. Write all possibilities of the truth table for the logical OR gate with two inputs (A, B) and an output (X)?**

**2. Explain how the AND gate works when two inputs (A = 1, B = 1) are connected, and what is the expected output in this case?**

**Put (√) mark in front of the correct statement and (×) mark in front of the wrong statement:**

**3. In computers, the number (1) is processed as a true value and the number (0) as a false value. ( )**

**Choose the correct answer:**

**4. The logic circuit that outputs (1) if there is at least one input equal to (1) is the:**

- **A) NOT gate**
- **B) OR gate**
- **C) AND gate**
- **D) Inverter gate**

# Homework Assignment:

**First:**

**1. State the three basic logic gates, briefly explaining the logical function of each gate.**

**2. Find the value of the output (X) in each of the following cases:**

**(1) The inputs of an OR gate are A=0, B=0**

**(2) The inputs of an AND gate are A=1, B=1.**

## Put (√) mark in front of the correct statement and (×) mark in front of the wrong statement:

**3. The only case in which an OR gate outputs a value of (0) is when all inputs are equal to (0) ( )**

## Choose the correct answer:

**4. When passing the output of an OR gate whose inputs are ($A = 1, B = 0$) into a NOT gate, the value of the final output is equal to:**

**A) 0**
**B) 1**
**C) 2**
**D) 10**