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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Sixth Week

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Weekly assessment

First test

First:

1. **Explain the 10's complement with an example.**
2. **Explain the 2's complement with an example.**

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

3. **The One's Complement is obtained by inverting all binary digits, changing every (0) to (1) and every (1) to (0).** **( )**

Choose the correct answer:

٤. When finding the Two's Complement of the binary number (0101), the correct result is:

A) **(١٠١٠)**
B) **(١٠١١)**
C) **(١١٠٠)**
D) **(٠١٠١)**

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Second test

First:

1. **How is the one's complement of any binary number obtained?**
2. **What is the difference between the one's complement and the two's complement?**

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

3. **To find the two's complement of a given number, we first find the one's complement and then add the value (1) to the least significant bit. ( )**

Choose the correct answer:

٤. **The one's complement of the binary number (1100) is:**

- **A)** (٠٠١١)
- **B)** (٠١٠٠)
- **C)** (١٠١١)
- **D)** (٠٠٠٠)

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Third test

First:

1. **Subtract the number (1011) – (1010) using the Two's Complement?**
2. **What is the difference between the Two's Complement and the One's Complement?**

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

3. **When subtracting two binary numbers using the two's complement, the appearance of an extra bit on the far left always indicates an error in the calculation. ( )**

Choose the correct answer:

٤. **If we have the binary number (1001), then its two's complement is equivalent to:**

A) (٠١١١)
B) (٠١١٠)
C) (١٠٠٠)
D) (٠١٠١)

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Classroom Assessment:

First:

1. **Explain the role of complements in performing arithmetic operations such as subtraction?**
2. **What is the one's complement?**

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

3. **The subtraction of binary numbers can be accomplished by adding the minuend to the two's complement of the subtrahend. ( )**

Choose the correct answer:

1. **If we want to find the two's complement of the number (1010), the first step depends on obtaining:**
   A) The one's complement (0101)
   B) The binary multiple of the number
   C) The inverse of the absolute sign
   D) The value of binary zero

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Homework Assignment:

First:

1. **What is meant by the two's complement?**
2. **Explain in steps how to find the two's complement of any binary number?**

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

3. **The one's complement of the number (0000) is the number (1111). ( )**

Choose the correct answer:

4. **The two's complement of the binary number (0010) is equal to:**
   - **A) (١١١٠)**
   - **B) (١١٠١)**
   - **C) (١١١١)**
   - **D) (٠٠١٠)**

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