CS101 updated Midterm Past Paper MCQs Questions From 2020 to date
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In binary fraction representation, what does the radix point signify?

A. It separates positive and negative values.

B. It indicates the position of the exponent.

C. It separates the whole number part from the fractional part.

D. It represents the sign of the number.

Correct Answer: C (It separates the whole number part from the fractional part.)

Which field in floating-point notation designates the high-order bit as the sign bit?

A. Mantissa field

B. Exponent field

C. Significance field

D. Fraction field

Correct Answer: B (Exponent field)

In 2's complement notation, how are negative integers represented?

A. Starting with all 0's and counting upwards

B. Starting with all 1's and counting upwards

C. Starting with all 1's and counting downwards

D. Starting with all 0's and counting downwards

Correct Answer: C (Starting with all 1's and counting downwards)

What is the primary purpose of the sign bit in 2's complement notation?

A. To indicate the position of the radix point

B. To separate the whole number and fractional part

C. To represent the magnitude of the number

D. To indicate the sign of the number (positive or negative)

Correct Answer: D (To indicate the sign of the number)

What is the maximum positive value that can be represented using 4 bits in 2's complement notation?

A. 7

B. 8

C. 15

D. 16

Correct Answer: A (7)

How is overflow addressed in 2's complement notation?

A. By using more bits for representation

B. By changing the units of measurement

C. By switching to floating-point notation

D. Overflow cannot be addressed

Correct Answer: A (By using more bits for representation)

In Excess notation, which bit pattern is used to represent zero?

A. The pattern with the highest significant bit set to 1

B. The pattern with all bits set to 0

C. The pattern with all bits set to 1

D. The pattern with the highest significant bit set to 0

Correct Answer: A (The pattern with the highest significant bit set to 1)

How are positive numbers represented in Excess notation?

A. By adding a fixed number to their binary representation

B. By subtracting a fixed number from their binary representation

C. By using the original binary representation

D. By inverting all the bits in their binary representation

Correct Answer: A (By adding a fixed number to their binary representation)

What is the role of the exponent field in floating-point notation?

A. It stores the sign of the number.

B. It determines the position of the radix point.

C. It represents the magnitude of the number.

D. It indicates the number of bits used for storage.

Correct Answer: B (It determines the position of the radix point.)

In normalized floating-point notation, where should you start copying the bit pattern when filling the mantissa field?

A. From the rightmost bit

B. From the leftmost 1 in the binary representation

C. From the leftmost bit

D. From the sign bit

Correct Answer: B (From the leftmost 1 in the binary representation)

What does the sign bit in floating-point notation indicate?

A. The position of the radix point

B. The sign of the exponent

C. The sign of the mantissa

D. The sign of the value (positive or negative)

Correct Answer: D (The sign of the value, positive or negative)

Which notation is commonly used to represent integers in today's computers?

A. Excess Notation

B. Floating Point Notation

C. 2's Complement Notation

D. Binary Notation

Correct Answer: C (2's Complement Notation)

In 2's complement notation, what is the leftmost bit used for?

A. To represent the magnitude of the number

B. To indicate whether the number is even or odd

C. To store the sign of the number

D. To separate the whole number and fractional part

Correct Answer: C (To store the sign of the number)

What does Excess notation represent?

A. The binary representation of a number

B. The position of the radix point

C. The magnitude of the number

D. The excess of a number over its binary representation

Correct Answer: D (The excess of a number over its binary representation)

Which field in floating-point notation represents the fractional part of a number?

A. Sign bit

B. Exponent field

C. Mantissa field

D. Radix field

Correct Answer: C (Mantissa field)

How is the maximum positive value in 2's complement notation determined when using 32 bits?

A. 2,147,483,648

B. 2,147,483,647

C. 2,000,000,000

D. 32,768

Correct Answer: B (2,147,483,647)

What does the radix point represent in binary fraction representation?

A. The sign of the number

B. The position of the exponent

C. The separation between whole and fractional parts

D. The number of bits used for representation

Correct Answer: C (The separation between whole and fractional parts)

In floating-point notation, how is the exponent field interpreted?

A. As an integer using the excess method

B. As a floating-point value

C. As a binary representation of the mantissa

D. As a sign of the value

Correct Answer: A (As an integer using the excess method)

What is the role of the sign bit in floating-point notation?

A. To indicate the position of the radix point

B. To separate the whole number and fractional part

C. To represent the magnitude of the number

D. To indicate the sign of the value (positive or negative)

Correct Answer: D (To indicate the sign of the value, positive or negative)

Which method eliminates the possibility of multiple representations for the same value in Excess notation?

A. Using a different number of bits

B. Using floating-point notation

C. Using normalized form

D. Using the same bit pattern for all values

Correct Answer: C (Using normalized form)