

36 Lecture - CS501

Important Mcqs

1. What is the range of the exponent in single-precision floating-point format?

- a. -126 to 127
- b. -127 to 127
- c. -128 to 127
- d. -129 to 128

Answer: a

What is the formula for converting a decimal number to single-precision floating-point format?

- a. Multiply the decimal number by 2^{32}
- b. Divide the decimal number by 2^{32}
- c. Multiply the decimal number by 2^{-32}
- d. Divide the decimal number by 2^{-32}

Answer: c

Which of the following is not a component of the IEEE 754 standard for floating-point arithmetic?

- a. Sign bit
- b. Exponent
- c. Mantissa
- d. Byte order

Answer: d

What is the smallest positive number that can be represented in single-precision floating-point format?

- a. 2^{-127}
- b. 2^{-126}
- c. 2^{-149}
- d. 2^{-148}

Answer: b

What is the largest number that can be represented in single-precision floating-point format?

- a. 3.4028235×10^{38}
- b. $1.7976931348623157 \times 10^{308}$
- c. 9.999999×10^{999}
- d. 2^{127}

Answer: a

What is the difference between normalized and denormalized floating-point numbers?

- a. Normalized numbers have a non-zero mantissa, while denormalized numbers have a zero mantissa
- b. Normalized numbers have a zero exponent, while denormalized numbers have a non-zero

exponent

c. Normalized numbers have a non-zero exponent, while denormalized numbers have a zero exponent

d. Normalized numbers have a larger range of representable values than denormalized numbers

Answer: a

Which of the following operations is not commutative in floating-point arithmetic?

a. Addition

b. Multiplication

c. Division

d. Subtraction

Answer: d

Which of the following is a common method for handling floating-point exceptions?

a. Rounding

b. Truncation

c. Exception handling routines

d. None of the above

Answer: c

What is the main disadvantage of using floating-point arithmetic compared to integer arithmetic?

a. It is slower

b. It is less accurate

c. It requires more memory

d. It is more difficult to implement

Answer: a

Which of the following is an example of a floating-point representation system that does not use the IEEE 754 standard?

a. IBM floating-point format

b. VAX floating-point format

c. ARM floating-point format

d. All of the above use the IEEE 754 standard

Answer: b