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 floatingpoint 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 x 10^38 b. 1.7976931348623157 x 10^308 c. 9.999999 x 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

<mark>Answer: c</mark>

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