1. Compare and contrast the float and Decimal classes' benefits and drawbacks.

Ans: Floating point data type represent number values with fractional parts. Decimal accurately represent any number within the precision of the decimal format, whereas Float cannot accurately represent all numbers. ... Performance of Decimals is slower than and float data types.

2. Decimal('1.200') and Decimal('1.2') are two objects to consider. In what sense are these the same object? Are these just two ways of representing the exact same value, or do they correspond to different internal states?

3. What happens if the equality of Decimal('1.200') and Decimal('1.2') is checked?

Ans: If we check the equality means it will return true as an answer

4. Why is it preferable to start a Decimal object with a string rather than a floating-point value?

Ans: The main reason to transfer numeric values as strings is to eliminate any loss of precision or ambiguity in transfer.

5. In an arithmetic phrase, how simple is it to combine Decimal objects with integers?

Ans: A computer performing integer arithmetic ignores any fractions that are derived. For example, 8 divided by 3 would yield the whole number 2.

6. Can Decimal objects and floating-point values be combined easily?

Ans: yes Decimal objects and floating-point values be combined easily

7. Using the Fraction class but not the Decimal class, give an example of a quantity that can be expressed with absolute precision.

Ans: Accuracy refers to how closely a measured value agrees with the correct value. Precision refers to how closely individual measurements agree with each other. ... The number of significant figures is the number of digits believed to be correct by the person doing the measuring. It includes one estimated digit.

8. Describe a quantity that can be accurately expressed by the Decimal or Fraction classes but not by a floating-point value.

Ans: finding an upper bound for which a floating point number can be stored, that is, finding an integer such that all floating point integers such that $0 ≤ x ≤ M$ can be stored precisely in such a format.

Q9.Consider the following two fraction objects: Fraction(1, 2) and Fraction(1, 2). (5, 10). Is the internal state of these two objects the same? Why do you think that is?

Ans:

Q10. How do the Fraction class and the integer type (int) relate to each other? Containment or inheritance?

Ans: Integers include all whole numbers, plus the negatives of all the numbers except zero. They do not include any decimal or fractional numbers. Fractions, on the other hand, express one integer divided by another, and often equal a decimal number