

by Kunal Sir

Assignment : Type Casting

Learning Objectives

By completing this assignment, students will be able to:

- Understand what type casting is in Java
 - Differentiate between implicit (widening) and explicit (narrowing) type casting
 - Predict output of Java programs involving type casting
 - Avoid common mistakes related to data loss and casting
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Part A: Tricky MCQs (15 Questions)

1. What will be the output?

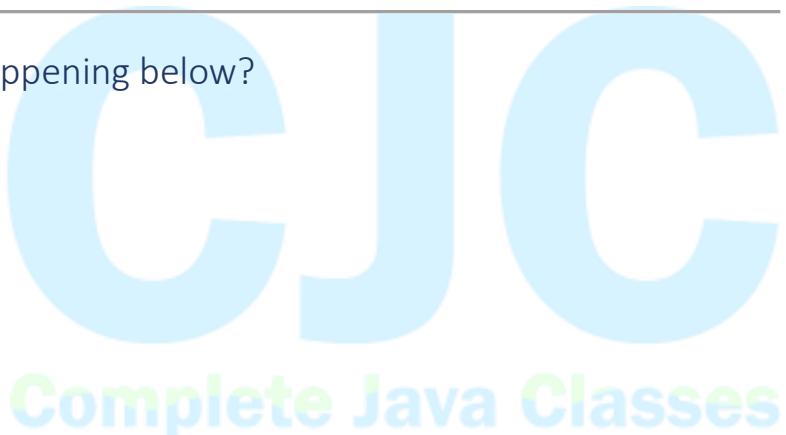
```
int a = 10;  
double b = a;  
System.out.println(b);
```

- A) 10
- B) 10.0
- C) Compilation error
- D) Runtime error

2. Which type of casting is happening below?

```
float f = 25;
```

- A) Explicit casting
- B) Narrowing casting
- C) Implicit casting
- D) Invalid casting



3. What will be the output?

```
double d = 9.8;  
int i = (int) d;  
System.out.println(i);
```

- A) 9.8
- B) 10
- C) 9
- D) Compilation error

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4. Which of the following conversions may cause data loss?

- A) int → long
 - B) float → double
 - C) double → int
 - D) char → int
-

5. What will be the output?

```
char ch = 'A';
int x = ch;
System.out.println(x);
```

- A) A
- B) 65
- C) Compilation error
- D) Runtime error



6. Which casting is done automatically by JVM?

- A) Explicit
 - B) Narrowing
 - C) Manual
 - D) Implicit
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7. What will be printed?

```
int a = 130;  
byte b = (byte) a;  
System.out.println(b);
```

- A) 130
- B) -126
- C) 127
- D) Compilation error

8. Which statement is TRUE?

- A) Explicit casting is always safe
- B) Implicit casting may cause data loss
- C) Explicit casting can cause data loss
- D) Java does not support type casting

9. What happens if explicit casting is not done where required?

- A) Program runs normally
 - B) Runtime error
 - C) Logical error
 - D) Compilation error
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10. What will be the output?

```
int a = 5;  
int b = 2;  
double c = a / b;  
System.out.println(c);
```

- A) 2.5
- B) 2
- C) 2.0
- D) Compilation error

11. To get correct decimal output in Q10, what should be done?

- A) Cast a to double
- B) Cast b to int
- C) Use long
- D) No change needed

12. Which conversion is NOT allowed implicitly?

- A) int → double
- B) byte → int
- C) double → float
- D) char → int

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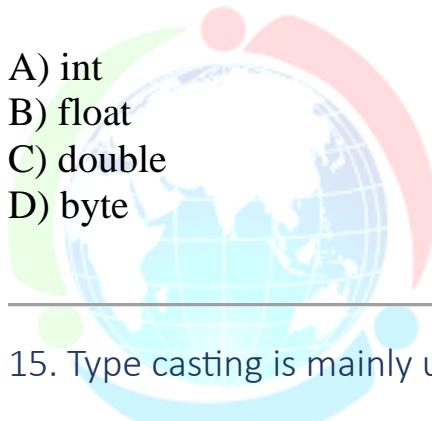
13. What will be the output?

```
float f = 7.9f;  
int i = (int)(f + 0.5);  
System.out.println(i);
```

- A) 7
 - B) 7.9
 - C) 8
 - D) Compilation error
-

14. Which data type has the largest range?

- A) int
- B) float
- C) double
- D) byte



15. Type casting is mainly used to:

- A) Increase execution speed
 - B) Reduce code length
 - C) Convert one data type to another
 - D) Avoid syntax errors
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Part B: Problem Statements (15 Problems)

1. Write a program to demonstrate implicit type casting from int to double.

2. Write a program to convert a double value into int using explicit casting and display both values.

3. Take an integer value and store it into a float variable using implicit casting. Print the result.

4. Write a program that shows data loss during explicit type casting (double to int).

5. Convert a char value into its ASCII value using type casting.

6. Write a program where division of two integers gives incorrect output. Then fix it using type casting.

7. Demonstrate narrowing conversion from int to byte and print the result.

8. Write a program to convert float to int and explain the output using comments.

9. Take user input as double and convert it into int. Display both values.

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10. Write a program that adds an int and a double and stores the result in a double variable.

11. Write a program to show implicit casting in expressions (int + double).

12. Convert a large int value into byte and observe the output.

13. Write a program that demonstrates why explicit casting is mandatory in narrowing conversion.

14. Create a program that converts marks (double) into integer percentage using type casting.

15. Write a Java program that explains (using comments) the difference between implicit and explicit type casting with examples.

Complete Java Classes