Order of Operations 26 August

1. What is the value of the expression `10 * 2 + 3 / 4 - 5 % 2` in Java (assuming integer operations)? a) 19 b) 20 c) 18 d) 21
2. Evaluate `true || false && true` in Java. a) true b) false c) Compilation error d) Runtime error
3. What is the result of `5 + 3 * 2 << 1`? a) 22 b) 16 c) 17 d) 11
4. Given `int x = 5; int y = x++ + ++x * 2;`, what is y? a) 17 b) 15 c) 16 d) 18 19
5. What does `! (true && false) || true` evaluate to? a) false b) true c) Compilation error d) true && false
6. Evaluate `10 / 2 % 3 + 4 * 5`. a) 20 b) 21 c) 25 d) 0 22
7. What is the value of `a = 10 > 5 ? 3 : 2 + 1` (assuming a is int)? a) 3 b) 4 c) 2 d) Compilation error
8. Given `int a = 1; int b = a++ * 2 + --a;`, what is b? a) 2 b) 3 c) 1 d) 0
9. Evaluate `5 | 3 & 2 ^ 1`. a) 7 b) 5 c) 6 d) 4
10. What is the result of `true ? false : true && false`? a) false b) true c) Compilation error d) Runtime error
11. Evaluate `10 + 20 >> 2 * 3`. a) 12 b) 15 c) 10 d) 7 30/64=0
12. Given `int x = 4; int y = x-- - --x + x++;`, what is y? a) 4 b) 5 c) 3 d) 6
13. What does `(10 >= 10) == (5 <= 4)` evaluate to? a) true b) false c) Compilation error d) true == false
14. Evaluate `~5 + -3 * 2`. a) -12 b) -6 c) -11 d) 0
15. What is the value of `a = b = c = 5 + 3 * 2` (assuming a, b, c are ints)? a) a=11, b=11, c=11 b) a=16, b=16, c=16 c) Compilation error d) a=5, b=3, c=2
16. Evaluate `false && true || false ? 1 : 2`. a) 1 b) 2 c) false d) Compilation error
17. Given `int x = 10; x += x++ + ++x;`, what is x after execution? a) 31 b) 30 c) 32 d) 21
18. What is the result of `1 << 2 + 3 >> 1`? a) 8 b) 16 c) 4 d) 32
19. Evaluate `!(5 == 5) != (3 != 3)`. a) true b) false c) Compilation error d) true != false
20. Given `int a = 2; int b = a * 3 + 4 % 2 - 1 << 1;`, what is b? a) 10 b) 12 c) 11 d) 8

Final Exam: Put in order, highest to lowest:

1. Post increment, pre-increment, math, assignment, =, <, logic, lambda
2. +, %, <<, &, &&, ^, |, ||, =, += Ans: %, +, <<, &, ^, |, &&, ||, (=, +=)
   Note that assignment (e.g. =, +=) associates right to left.
   y = 3;
   x = y +=y *= 6;
   System.***out***.println(x);
   This prints out 21 not 36. Fairly tricky!