

1. Set of characters which a language can understand.
2. Two byte code for all the characters. E.g. A-Z=65-90
3. Smallest identifiable unit of a statement. Keywords(main), identifiers(any variable name), Literals(5), operators(+), punctuators(;
4. const, goto
5. true false null.
6. not a keyword, start with an alphabet, no special characters...
7. \$ _.
8. char('A'), Integer(5), Real(5.0), String("A"), Boolean(true), Null(null)
9. Fractional, exponential
10. octal-hexadecimal.
11. Mantissa & exponent.
12. Codes for some non-graphic/special characters. E.g. '\t'. Yes(Active inside string)
13. Chart the data types in Java in order. Give an example for each.

| char | byte | short | int | long | float | double | boolean |
|------|---------|----------|-----|-------------|----------------------|------------|---------|
| 'A' | (byte)5 | (short)5 | 5 | (long)5, 5L | (Float)3.14 3.14F | 3.14 5D | true |

14. Chart:

| | | | | | |
|--------|---|---------------------------------|---------|---|------------------------------|
| char | 2 | 0 to 65535 | byte | 1 | -128 to 127 |
| short | 2 | -32768 to 32767 | int | 4 | -231 to 231-1 |
| long | 8 | -263 to 263-1 | float | 4 | ±3.4E+38 (Precision:7/9wide) |
| double | 8 | ±1.7e+308 (Precision:16/18wide) | boolean | 1 | 1 bit used. |
15. The width of the answer
16. An identifier. initialization- value given with declaration, assignment-after declaration.
17. initialization- usually at top, dynamic initialization- in between the program where the variable is required
18. '\0', 0, 0.0, null, false.
19. Area of the program where a variable can be accessed.
20. Block(in { } inside a function), function, class
21. l-value=memory location/address. r-value=contents of the location.
22. Which store l-value. Called so because l-value is also called a reference or memory address.
23. Precede "final" in declaration.
24. Unary-Binary-Ternary.
25. Can be used with strings as well as numbers.
26. Sum=1020(Concatenation takes place), 30 is the sum(addition takes place first)
27. 6, 22, .6
28. to check even/odd, extract last digit, extract values after the decimal point.
29. a=11 b=50 (evaluate then increase), a=11, b=55, (increase then evaluate)
30. No precedence, evaluated from L->R. Answer: a=12 b=3 c=30
31. Which result in true/false(conditions) – Yes they can be stored in variables – using the "boolean" data type.
32. Because they are not exact – they contain round off errors.
33. relational-match 2 operands, logical- join 2 conditions.
34. &=evaluates all, &&=short circuit.
35. Can be used with conditions as well as numbers.
36. On Binary equivalents of numbers.

37. >>=unsigned, >>>=signed (so unpredictable answers)

38. ^, gives false if both the conditions are true.

| 39. | C1 | C2 | & | | ~(Not) | ^(xor) |
|-----|----|----|---|---|--------|--------|
| | 0 | 0 | 0 | 0 | 1 | 0 |
| | 0 | 1 | 0 | 1 | | 1 |
| | 1 | 0 | 0 | 1 | 0 | 1 |
| | 1 | 1 | 1 | 1 | | 0 |

40. Shorter way of changing the value of a variable +=, -= etc.

41. Precedence(Order of evaluation) and Associativity(Order of evaluation when precedence is same), UARLCA

42. Answers – 10.0 Float applied after 21/2, 10 Precedence, 10 ?: evaluated after arithmetic operators, 99.0 ascii values of 1 & 2 added, 9 Associativity, 100 Type 65('A')+32(Space)+3

43.(i) Type casting – writing a data type before a value/variable in (), (ii) Coercion – implicit type promotion, (iii) Type compatibility. LHS data type >= RHS data type

44. Loss of precision, Loss of value

45.Expression statements Sop(), assignment etc, control flow- if, switch, for, while, do-while, declaration statement 0 in which a variable, function or a class is declared.

46.Conditional, after.

47.Changing of data type, 2 types- implicit(automatic), explicit(achieved by type casting)

48. Fixed(all operands same), Mixed(operands different).

49.Relational

50. math - pow(5,2), sqrt(25), cbrt(27), abs(-5.25), floor(5.2), ceil(21.1), max(8,3), min(5.0,3.0), random(), round(28.5), rint(28.5)). Other(Names to be learnt)- sin, cos, tan, acos, asin, atan, atan2, log, exp, log10.

Output: 25.0 5.0 3.0 5.25 5.0 22.0 8 3.0 0.8957603159013405 29 28.0

Character – isDigit('A')); isLetter('A')); isLetterOrDigit('A')); isLowerCase('A')); isUpperCase('A')); isWhitespace('A')); toLowerCase('A')); toUpperCase('A')); Output – f, t, t, f, t, f, a, A

51. (i) Block /Compound statement – Set of statement in { }, (ii) Null Statement. - ;

52.Single letter code put after a constant E.g. F, L, D: Usefulness: Short alternative for type casting

53.We need to make a class even for smallest of a program.

54.What does <> and [] mean in the syntax of any statement.

55.No, not unless we use “new” operator.

56. Instance variables – Declared inside a class but outside all functions. The are accessible by all the functions. Class variables – static instance variables – can be accessed without objects and have only 1 copy in memory. Instance Methods – Non-static functions of a class.

Class Methods – Static functions of a class. They can access class variables only.

57.Allocate space in the memory to an object.

58. No, (only Arithmetic to arithmetic and not to Boolean/string etc)

59. Math.sin(Math.abs(c)+(1.0/2.0)*Math.sqrt(Math.pow(a,2)+Math.pow(b,1.0/5.0)), Math.floor(a)+Math.max(b,c)/Math.log(c)

60. blank.