Unit 1 – Java Input and Output – Binary, Hexadecimal, ASCII, Unicode

1. Number system based on 2.	Binary
2. Number system based on 10	Decimal
3. Number system based on 16	Hexadecimal
4. An encoding system that is only for English letters.	ASCII
5. First 6 columns for binary.	1, 2, 4, 8, 16, 32
6. A letter encoding system that is only 7 bits long.	ASCII
7. Allowed digits in hexadecimal.	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F
8. First 4 columns for hexadecimal	1, 16, 256, 4096
9. A letter encoding system that is longer than 7 bits.	Unicode
10. Allowed digits in binary.	0, 1
11. A letter encoding system for all the world's languages.	Unicode
12. Why is ASCII useful?	It encodes English letters into binary.
13. What does the 32 bit stand for in ASCII?	1 = small letter. 0 = capital.
14. What do the last 5 bits (1-16) stand for in ASCII?	The letter position in the alphabet. 1 = A
15. In hexadecimal, how is 12 written?	C
16. In hexadecimal, how is 15 written?	F
17. In hexadecimal, how is 13 written?	D
18. In hexadecimal, how is 11 written?	B
19. In hexadecimal, how is 14 written?	E
20. In hexadecimal, how is 10 written?	A
21. Why is binary useful?	Everything on a computer is translated to binary. Pictures, numbers, music, letters: everything.
22. Why is everything on a computer stored in binary?	1. Because it is easier to store on hardware. 2. ONE can be on and ZERO can be off. 3. A based 10 system would need 10 levels instead of 2.
23. Why is hexadecimal useful?	1. It can be used to summarize 4 digits of binary in one digital of hexadecimal. 2. This makes it easier for HUMANS to read binary. 3. Computers don't use it. They use binary.

24. n % 1? (n is not zero)	0
25. n / 1?	N
26. n % 0?	Error
27. n / 0?	Error
28. 1 / n? (n is not zero or one))	0
29. 1 % n? (n is not zero or one)	1
30. n / n (n is not zero)	1
31. n % n (n is not zero)	0
32. a % b **if a is bigger than b**? (both not zero) eg. 4 % 27?	A
33. a % 2 **if a is even**	0
34. a % 2 **if a is odd**	1
35. What are two uses of mod?	1. To find if numbers are even or odd 2. To calculate change or leftovers
36. Mod can only be used with this variable type.	int
37. The kind of operations that a variable can do.	Type
38. Another word for Decision Statements.	If
39. The amount of memory that a variable gets.	Type
40. Name of the math remainder operation.	Mod (%)
41. The place where you place your code in a program.	Constructor
42. A pencil on a flowchart is used for this operation.	Output
43. A way of encoding just English into binary.	ASCII
44. A way of encoding all of the world's languages into binary.	Unicode
45. A diagram used to plan programs.	Flowcharts
46. To create a new variable.	Declare
47. Binary 1001 has this value in decimal.	9
48. Last (optional) clause of an if.	Else
49. A parallelogram on a flowchart is used for this operation.	Input
50. Second keyword in a program.	Class

51. An expression that evaluates to true or false.	Boolean
52. The starting point of a program.	Main method
53. The largest type of variable.	String
54. A space in RAM (memory).	Type
55. Keyword used to declare decimal numbers	Double
56. How do you output a tab?	\t
57. How do you output a \	\\
58. How do you output a new line?	\n OR System.out.println();
59. Math function for 3.14159	Math.PI
60. Math function for exponents	Math.pow
61. Math function for sqrt	Math.sqrt
62. When you are filling in an input parallelogram on a flowchart, what do you write?	Get and the variable name. Do not write the prompt message. Eg. Get num
63. When you are filling in a Boolean expression diamond, what do you write?	The stuff in the if's Boolean expression. It is in the brackets ( ) Do not write "if"
64. A variable type can be thought of as two things. What are they?	1. The amount of memory (RAM) given to a variable. 2. The kinds of operations that a variable can do, for example math.
65. Strings need these around them	Double quotes
66. Chars need these around them	Single quotes
67. Chars are stored in this format	ASCII
68. Why shouldn't we store all variables as Strings?	1. Strings take up the most memory 2. Strings can't do math
69. Why are flowcharts useful?	1. They allow us to plan the flow of our program 2. They allow us to visualize how our code works.
70. Why are variables useful?	1. We can use them to store input until we need it again 2. We can use them to store the results of calculations 3. We can use them in Boolean expressions to make decisions