

ICS4U – Test 1 Review Questions – Applets, PARC, Strings & Testing – 2024

1. Identify 3 types of widgets	JLabel, JButton, JTextfield
2. Define widget	A widget is a piece of a graphical user interface (GUI). It can be seen, typed in or clicked on.
3. What happens in the init method?	You set up the screen. You can new or add here (only here).
4. What happens in the actionPerformed method?	The screen changes. You can getText and setText here.
5. Name the primary colours.	Red, Green, Blue
6. RGB code for red	255, 0, 0
7. RGB code for blue	0, 0, 255
8. RGB code for green	0, 255, 0
9. RGB code for magenta	255, 0, 255
10. RGB code for yellow	255, 255, 0
11. RGB code for cyan	0, 255, 255
12. RGB code for black	0, 0, 0
13. RGB code for white	255, 255, 255
14. What colour is red+green?	Yellow
15. What colour is green+blue?	Cyan
16. What colour is blue+red?	Magenta
17. The name of the rocket that exploded 40 seconds after takeoff?	Ariane 5
18. Who made the rocket that exploded?	European Space Agency (ESA)
19. How much was the rocket + payload worth?	\$7.5 billion
20. What does the rocket teach us about why testing is important?	If you don't test well, the errors you miss might be very expensive.
21. What test case was missed on the rocket?	Black Box – average data for speed variable
22. Who made the radiation machine to treat cancer?	American Megatrends
23. Where was the location of the cancer machine when it malfunctioned?	Panama City
24. What test case was missing on the radiation machine?	White Box – Loop many times
25. What resulted from the lack of testing in the radiation machine?	28 people receive overdoses. 17 die, 11 severely injured.
26. What can we learn about testing from the radiation machine failure?	If you don't test well, you could harm people or in extreme cases, even kill them.

27.What are the white box test cases?	If: <ol style="list-style-type: none"> 1. Test each branch Loop: <ol style="list-style-type: none"> 2. Avoid Loop. 3. Loops once. 4. Loop many times
28.What are the black box test cases?	<ol style="list-style-type: none"> 1. Small data 2. Large data 3. Average data 4. Boundary cases
29.What are good boundary cases for integers?	<ol style="list-style-type: none"> 1. -1 2. 0 3. 1
30.What are good boundary cases for Strings?	<ol style="list-style-type: none"> 1. An empty string 2. A number 3. Dashes and special characters
31. What is a good small case for String?	<ol style="list-style-type: none"> 1. A single character
32.What is a good large case for a String?	Anti dis establish mentarian ism (the longest word, or one of them)
33.Define white box testing.	Testing that occurs by looking at the code. Your goal is to run each line of code .
34.Define black box testing.	Testing that occurs without looking at the code. Your goal is to input as many different things as possible.
35.Why do we need both white and black box testing?	They test different things (running each line of code AND kinds of input). By approaching testing from different angles, you can find more errors.
36.Test this loop: for (int i=0; i<s.length(); i++)	Avoid Loop – empty string Loop once – string of one character Loop many times – Normal string
37.What String function is used to pull out part of a String?	Substring
38.What String function is used to pull out a single character from a String from a specific location?	charAt
39.What String function finds the location of first instance of a character in a String?	indexOf
40.What is the difference between finding an array's length and a String's length?	Array = a.length String = s.length()

41.How do the parameters of substring work?	The first number is where you start. It is included. The second number is the end – it is NOT included. Stop BEFORE the second number.
42.A type that holds ASCII characters.	Char
43.A type that holds a group of characters.	String
44.An encoding technique for translating letters to binary.	ASCII
45.A's ASCII value	65
46.a's ASCII value	97
47.A general term for encrypted text	Ciphertext
48.A general term for unencrypted text	Plaintext
49.A general term for a series of steps to encrypt text.	Algorithm
50.A specific value used by an encryption algorithm to encrypt or decrypt data	Key
51.Translating plaintext to ciphertext	Encryption
52.Translating ciphertext to plaintext	Decryption
53.Encryption used by Roman military	Caesar shift
54.How do you spell Caesar?	Caesar
55.Encryption that uses a shiny surface	Mirror writing
56.Encryption where the first letters is moved to the end and ay is added	Pig Latin
57.Encryption that uses a randomized alphabet as its key	Random Substitution Cipher
58.Writing that is backwards.	Mirror writing
59.Encryption that uses a random alphabet to scramble it.	Random Substitution Cipher
60.Encryption that moves letters one forward in the alphabet.	Caesar shift
61.Encryption named for a farm animal and an ancient language.	Pig Latin
62.The name for (int) – converts from char to an int.	Casting
63.How to convert a char to a String	+ "" (add an empty String)
64.How to convert a String to an int	Integer.parseInt(the string)
65.How to convert a String to a double	Double.parseDouble(the string)
66.How to convert a char to an int	(int) the char
67.How to convert an int to a char	(char) the int

68.How do you loop through a string?	<pre>for(int i=0; i<s.length(); i++) [inside somewhere] s.charAt(i)</pre>
69.How do you pull off the last letter of a String?	<pre>s.charAt(s.length()-1)</pre>
70.How do you pull off the first letter of a String?	<pre>s.charAt(0)</pre>
71.Name the PARC principles.	Proximity Alignment Repetition Contrast
72.Explain contrast.	The element that is the most important, or the starting point, stands out. It is formatted differently than all of the other elements in the app.
73.Explain repetition.	Visual elements should repeat throughout the app. (fonts, colours, shapes, picture styles, sizes)
74.Explain alignment.	Nothing is placed on the screen arbitrarily. Every element should line up with others on the screen.
75.Explain proximity.	Items relating to each other should be grouped together. These groups should be visually separated from other groups with a space.
76. Why is alignment important?	Placement of elements unifies the page.
77.Why is proximity important?	Gives the page clear structure.
78.Why is contrast important?	The different item provides a starting point for the user.
79.Why is repetition important?	Unifies the design. Make it look like it belongs together.
80.What is pixelation?	Picture looks blocky. It has been enlarged too much.
81.When you stretch a picture in strange ways that were not intended, what problem results?	It is warped or distorted.