Q1. What is the benefit of regular expressions?

Ans: Regular expressions, also known as regex or regexp, are used to match strings of text such as specific characters, words, or patterns of characters. This means that regular expressions can be used to match and extract arbitrary string patterns from text. It helps programmers write less and cleaner code. Also, avoid using if/else statements multiple times.

Q2. Describe the difference between the effects of "(ab)c+" and "a(bc)+." Which of these, if any, is the unqualified pattern "abc+"?

Ans: Both (ab)c+ and a(bc)+ are valid patterns. The difference between these two patterns is that (ab)c + ab is a group, while a(bc) + bc is also group.

Q3. How much do you need to use the following sentence while using regular expressions?

import re

Ans: import re statement should be there always before using regular expressions or regex.

Q4. Which characters have special significance in square brackets when expressing a range, and under what circumstances?

Ans: The characters .,\*,?,^ or ,() have special meaning when used with square brackets. You don't need to explicitly escape them with \ as you do in the raw string sample text.

Q5. How does compiling a regular-expression object benefit you?

Ans: You can combine regular expression patterns into pattern objects that can be used for pattern matching. It's also useful for re searching patterns without rewriting them.

Q6. What are some examples of how to use the match object returned by re.match and re.search?

Ans: Both re.search() and re.match() are functions of Python's re module. These functions are very efficient and fast for string searches. This function searches for a substring within a string and returns a match object if found. Returns nothing if not found.

There is a difference between using both functions. Both return the first match for a substring found within a string, but re.match() searches only the beginning of the string and returns a match object if found. However, if the substring match is found in the middle of the string, nothing is returned.

re.search() searches the entire string, even if the string contains multiple lines, and tries to match substrings on every line of the string.

Q7. What is the difference between using a vertical bar (|) as an alteration and using square brackets as a character set?

Ans: When | Then use pattern search or options. That means | or< in the search string. The first occurrence of the matched string is returned as the match object. If a charset within square brackets is used, the entire charset within the square brackets is searched and if a match is found it is returned.

Q8. In regular-expression search patterns, why is it necessary to use the raw-string indicator (r)? In   replacement strings?

Ans: Regex search patterns use raw strings, so you don't need to escape black slashes.