1. What is the name of the feature responsible for generating Regex objects?

import re

re.compile() will generate Regex objects

2. Why do raw strings often appear in Regex objects?

We use raw strings so that backslashes do not need to be escaped.

3. What is the return value of the search() method?

search() will return all matched objects.

4. From a Match item, how do you get the actual strings that match the pattern?

You can use group() method to return strings of the matched text

5. In the regex which created from the r'(\d\d\d)-(\d\d\d-\d\d\d\d)', what does group zero cover? Group 2? Group 1?

Group 0 covers the entire match, group 1 covers the first set of parentheses, and group 2 covers the second set of parentheses

6. In standard expression syntax, parentheses and intervals have distinct meanings. How can you tell a regex that you want it to fit real parentheses and periods?

Their iteral meanings can be escaped using backslashes, like \. or \(

7. The findall() method returns a string list or a list of string tuples. What causes it to return one of the two options?

If the regex has no groups, a list of string is returned; if the regex has groups, a list of tuples of strings is returned.

8. In standard expressions, what does the | character mean?

The | character signifies matching either one between two groups

9. In regular expressions, what does the character “?” stand for?

It can stand for matching 0 or 1 of the preceding group, or be used to signify nongreedy matching.

10.In regular expressions, what is the difference between the + and \* characters?

+ matches 1 or more; \* matches 0 or more

11. What is the difference between {4} and {4,5} in regular expression?

The {3} matches exactly three instances of the preceding group, and the {3, 5} matches between three and five instances.

12. What do you mean by the \d, \w, and \s shorthand character classes signify in regular expressions?

\d: Matches a single digit (0 to 9)

\w: Matches a single word character (alphanumeric and underscore)

\s: Matches a single space character (space, tab, and line breaks)

13. What do means by \D, \W, and \S shorthand character classes signify in regular expressions?

\D: Matches a single character that is not digit

\W: Matches a single character that is not alphanumeric and not underscore

\S: Matches a single character that is not spaces

14. What is the difference between . and .?

The . performs a greedy match, while the .? performs a nongreedy match.

15. What is the syntax for matching both numbers and lowercase letters with a character class?

[0-9a-z]

16. What is the procedure for making a normal expression in regax case insensitive?

Using re.IGNORECASE as a second argument in compile():

re.compile(<pattern>, re.IGNORECASE)

17. What does the . character normally match? What does it match if re.DOTALL is passed as 2nd argument in re.compile()?

The . character is a broadest match wildcard that matches any characters except the newline character. If re.DOTALL is passed as the second argument to re.compile(), then the dot will also match newline characters.

18. If numReg = re.compile(r'\d+'), what will numRegex.sub('X', '11 drummers, 10 pipers, five rings, 4 hen') return?

‘X drummers, X pipers, five rings, X hen’

19. What does passing re.VERBOSE as the 2nd argument to re.compile() allow to do?

This flag allows you to write regular expressions that look nicer and are more readable by allowing you to visually separate logical sections of the pattern and add comments.

20. How would you write a regex that match a number with comma for every three digits? It must match the given following:

'42'

'1,234'

'6,368,745'

but not the following:

'12,34,567' (which has only two digits between the commas)

'1234' (which lacks commas)

re.compile(r’^\d{1, 3}(,\d{3})\*$’)

21. How would you write a regex that matches the full name of someone whose last name is Watanabe? You can assume that the first name that comes before it will always be one word that begins with a capital letter. The regex must match the following:

'Haruto Watanabe'

'Alice Watanabe'

'RoboCop Watanabe'

but not the following:

'haruto Watanabe' (where the first name is not capitalized)

'Mr. Watanabe' (where the preceding word has a nonletter character)

'Watanabe' (which has no first name)

'Haruto watanabe' (where Watanabe is not capitalized)

re.compile(r’[A-Z]\w\*\sWatanabe’)

22. How would you write a regex that matches a sentence where the first word is either Alice, Bob, or Carol; the second word is either eats, pets, or throws; the third word is apples, cats, or baseballs; and the sentence ends with a period? This regex should be case-insensitive. It must match the following:

'Alice eats apples.'

'Bob pets cats.'

'Carol throws baseballs.'

'Alice throws Apples.'

'BOB EATS CATS.'

but not the following:

'RoboCop eats apples.'

'ALICE THROWS FOOTBALLS.'

'Carol eats 7 cats.'

re.compile(r’(Alice|Bob|Carol)\s(eats|pets|throws)\s(apples|cats|baseballs)’, re.IGNORECASE)