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

**re.compile()**

**example:**

**phone\_no=re.compile(r’\d{3}-\d{3}-\d{4}’)**

**Here phone\_no variable contains a Regex object**

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

**The ‘r’ character, generally called raw string, often appears in Regex objects .The ‘r’ or raw string will not interpret \(backslash) as an escape sequence as Regex engine uses \ for special search purposes.**

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

**First occurrence of the regular expression if a match is found including the start index and end index.**

**Or a None if there is no match.**

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

**By using group method.**

**Match.group()**

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?

**For example if the string given is :234-111-2345**

**Group zer0 will cover-all the string, therefore output will be: 234-111-2345**

**Group1- first three digit-234**

**Group2-last 7 digit including the hyphen:111-2345**

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?

**By escaping the parenthesis and periods using a backslash: \(\) for () and \. for a period.**

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 findall() method has no capturing group or one capturing group in the pattern then it return list of strings as output.**

**If the findall() methiod has multiple capturing groups in the pattern then it returns list of tuples as an output.**

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

**A Boolean operator**

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

**It acts as an or operators. Where we can give two options/pattern for search.**

**Example:**

**import re**

**str=" Ray rey rosa ray"**

**match=re.findall('ray|rey',str,flags=re.IGNORECASE)**

**print(match)**

output=['Ray', 'rey', 'ray'] ['Ray', 'rey', 'ray']

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

**+ indicates one or more occurrences of pattern to search.**

**\*Indicates zero or more occurrences of pattern to search.**

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

**{4} indicates range of 4 digits**

**{4,5} indicates digits ranging from 4 to 5**

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

**\d-Match the digits**

**\w-matches alphanumeric characters including underscore**

**\s-matches matches all the whilespaces**

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

**\D-Matches any non digit characters**

**\S- Matches any non-whitespace character**

**\W- Matches any non-alphanumeric characters including underscore**

14. What is the difference between .\*? and .\*?

Question not clear

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

**Print(re.findall(‘[a-z0-9]’, “Welcome 2023”))**

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

**Using flags=re.IGNORECASE as a third parameter in the search pattern**

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

**. character will consider any character except new line**

**Re.DOTALL flag will modify the behavior of( . )character where during the search \n will be also be matched .**

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?

**re.VERBOSE allows you to write the expressions in a more readable manner in multiline including the 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)

Solution:

**import re**

**reg=re.compile(r'(^\d{1,3}),(\d{3}),(\d{3})')**

**match=reg.findall('1,184,123')**

**print(match)**

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)

Solution:

**import re**

**Str='Watanabe'**

**reg1=re.compile(r'^[A-Z][a-z]+\sWatanabe')**

**match=reg1.search('haruto Watanabe')**

**print(match)**

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.'

Solution:

**import re**

**str='BOB EATS CATS.'**

**match=re.search(r'(Alice|Bob|Carol)\s(eats|pets|throws)\s(apples|cats|baseballs).',str,flags=re.IGNORECASE)**

**print(match)**

**if match!=None:**

**print(match.group())**