1.

```
import re
sample_text = ’Python Exercises, PHP exercises.’
print(re.sub("[ ,.]", ":", sample_text))
```

2.

```
import pandas as pd
import re
Dictionary= {’SUMMARY’ : [’hello, world!’, ’XXXXX test’, ’123four, five:; six...’]}
df = pd.DataFrame(Dictionary)
df[’SUMMARY’] = df[’SUMMARY’].apply(lambda x: re.sub(’[^A-Wa-z\s]+’, ’’, x))
print(df)
```

3.

```
import re

def find_allwords(example):
  pattern = re.compile(r’\b\w{4}\b’)
  matches = pattern.findall(example)
  return matches


sample = "My Name is Dhiraj Kumar, I am a student of Data Analytics "
result = find_allwords(sample)
print(result)
```

4.

```
import re

def find_allwords(example):
  pattern = re.compile(r’\b\w{3,5}\b’)
  matches = pattern.findall(example)
  return matches


sample = "My Name is Dhiraj Kumar, I am a student of Data Analytics "
result = find_allwords(sample)
print(result)
```

5.

```
import re

def remove_parenthesis(Sample_text):
    pattern = re.compile(r’\(|\)’)
    new = [pattern.sub(’’, string) for string in Sample_text]
    for string in new:
        print(string)

Sample_text =  ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Science World)",
"Data (Scientist)"]

remove_parenthesis(Sample_text)
```

6.

```
import re

def remove_parenthesis(strings):
  pt = re.compile(r"[()]")
  modified_strings = []
  for string in strings:
    modified_string = re.sub(pt, "", string)
    modified_strings.append(modified_string)
  return modified_strings


text = ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Science World)", "Data (Scientist)"]
result = remove_parenthesis(text)
print(result)
```

7.

```
import re
Sample = "ImportanceOfRegularExpressionsInPython"
print(re.findall(’[A-Z][^A-Z]*’, Sample))
```

8.

```
import re

def insert_spaces(text):

  pt = r’([a-zA-Z])(\d)’
  result = re.sub(pt, r’\1 \2’, text)
  return result

text = "RegularExpression1IsAn2ImportantTopic3InPython"
output = insert_spaces(text)
print(output)
```

9.

```
import re

def insert_spaces(text):

  pt = r’(\d+(\.\d+)?)’
  result = re.sub(pt, r’ \1 ’, text)
  return result

text = "RegularExpression1IsAn2ImportantTopic3InPython"
output = insert_spaces(text)
print(output)
```

10.

```
import pandas as pd

def process_data(csv_file):
    df = pd.read_csv(csv_file)
    df[’first_five_letters’] = df[’Country’].str[:6]

    return df

csv_file = ’https://raw.githubusercontent.com/dsrscientist/DSData/master/happiness_score_dataset.csv’
df = process_data(csv_file)
print(df)
```

11.

```
import re

def is_match(string):
    pattern = r’^[A-Za-z0-9_]+$’
    if re.match(pattern, string):
        return True
    else:
        return False
string = ’Datatrained_Academy123’
print(is_match(string))

string = ’Invalid string example’
print(is_match(string))
```

12.

```
import re
def match_num(string):
    text = re.compile(r"^5")
    if text.match(string):
        return True
    else:
        return False
print(match_num(’10-234576261’))

print(match_num(’546537861’))
```

13.

```
import re
ip = "453.05.047.0132"
st = re.sub(’\.[0]*’, ’.’, ip)
print(st)
```

14.

```
import re

sample_text = "On August 15th 1947 that India was declared independent from British colonialism, and the reins of control were handed over to the leaders of the Country."
```

```
pt = r"\b([A-Z][a-z]+) \d{1,2}(?:st|nd|rd|th)? \d{4}\b"

matches = re.findall(pt, sample_text)
print(matches)
```

15.

```
import re
pt = [ ’fox’, ’dog’, ’horse’ ]
text = ’The quick brown fox jumps over the lazy dog.’
for pattern in pt:
    print(’Searching for "%s" in "%s" ->’ % (pattern, text),)
    if re.search(pattern,  text):
        print(’Matched!’)
    else:
        print(’Not Matched!’)
```

16.

```
import re
pt = ’fox’
sample_text = ’The quick brown fox jumps over the lazy dog.’
match = re.search(pt, sample_text)
sp = match.start()
ep = match.end()
print(’Found "%s" in "%s" from %d to %d ’ % \
    (match.re.pattern, match.string, sp, ep))
```

17.

```
import re
sample_text = ’Python exercises, PHP exercises, C# exercises’
search = ’exercises’
for match in re.findall(search, sample_text):
    print(’Found "%s"’ % match)
```

18.

```
import re
sample_text = ’Python exercises, PHP exercises, C# exercises’
pt = ’exercises’
for m in re.finditer(pt, sample_text):
    s = m.start()
    e = m.end()
    print(’Found "%s" at %d:%d’ % (sample_text[s:e], s, e))
```

19.

```
import re
def change_format(dt):
        return re.sub(r’(\d{4})-(\d{1,2})-(\d{1,2})’, ’\\3-\\2-\\1’, dt)
date = "2024-01-09"
print("Original date in YYY-MM-DD Format: ",date)
print("New date in DD-MM-YYYY Format: ",change_format(date))
```

20.

```
import re

def decimal_numbers(text):
  pt = re.compile(r’\d+\.\d{1,2}’)
  all_decimal_numbers = re.findall(pt, text)
  return all_decimal_numbers


sample_text = "01.12 0132.123 2.31875 145.8 3.01 27.25 0.25"
output = decimal_numbers(sample_text)
print(output)
```

21.

```
import re
def find_numbers(input_string):
    numbers = re.findall(r’\b\d+\b’, input_string)
    return [(i, num) for i, num in enumerate(numbers)]

input_string = "My name 20 is 40, 866 dhiraj"
result = find_numbers(input_string)

for index, num in result:
    print(f"Number: {num}, Position: {index + 1}")
```

22.

```
import re
string=’My marks in each semester are: 947, 896, 926, 524, 734, 950, 642’
num = re.findall(’\d+’, string)
num = map(int, num)
print("Max_value:",max(num))
```

23.

```
import re
text=’RegularExpressionIsAnImportantTopicInPython"’
words = re.findall(’[A-Z][a-z]*’, text)
print(’ ’.join((words)))
```

24.

```
import re
def letter_match(text):
        pt = ’[A-Z]+[a-z]+$’
        if re.search(pt, text):
                return ’Found a match!’
        else:
                return(’Not matched!’)
print(letter_match("DaTa"))
print(letter_match("EdUcAtIoN"))
print(letter_match("python"))
print(letter_match("PYTHON"))
```

25.

```
import re

def remove_Duplicates(text):
    regex = r’\b(\w+)(?:\W+\1\b)+’
    return re.sub(regex, r’\1’, text,)

str1 = "Hello hello world world"

print(remove_Duplicates(str1))
```

26.

```
import re
regex = ’[a-zA-z0-9]$’
def check(string):
 if(re.search(regex, string)):
  print("Accept")

 else:
  print("Discard")

if __name__ == ’__main__’ :

 string = "dhiraj@"
 check(string)

 string = "ajay326"
 check(string)

 string = "ankit."
 check(string)

 string = "datascience"
 check(string)
```

27.

```
import re
def extract_hashtags(text):

 pt = "#(\w+)"
 hashtag_list = re.findall(pt, text)
 print("The hashtags in \"" + text + "\" are :")
 for hashtag in hashtag_list:
  print(hashtag)

if __name__ == "__main__":
 text1 = """RT @kapil_kausik: #Doltiwal I mean #xyzabc is "hurt" by #Demonetization as the same has ren
dered USELESS <ed><U+00A0><U+00BD><ed><U+00B1><U+0089> "acquired funds" No wo"""

 extract_hashtags(text1)
```

28.

```
import re

sample_text = "@Jags123456 Bharat band on 28??<ed><U+00A0><U+00BD><ed><U+00B8><U+0082>
Those who are protesting #demonetization are all different party leaders"

pt = r"<U\+\w{4}>"
text = re.sub(pt, "", sample_text)

print(text)
```

29.

```
import re
f = open("sample_text.txt", "r")
text = f.read()
pt = "\d{2}[/-]\d{2}[/-]\d{4}"

dates = re.findall(pt, text)


for date in dates:
    if "-" in date:
        day, month, year = map(int, date.split("-"))
    else:
        day, month, year = map(int, date.split("/"))
    if 1 <= day <= 31 and 1 <= month <= 12:
        print(date)
f.close()
```

30.

```
import re

def remove_all_words(string):
  pt = re.compile(r’\b\w{2,4}\b’)
  modified_string = re.sub(pt, ’’, string)
  return modified_string
```

```
sample_text = "The following example creates an ArrayList with a capacity of 50 elements. 4 elements are then added to the ArrayList and the ArrayList is trimmed accordingly."

result = remove_all_words(sample_text)
print(result)
```