Question 1- Write a RegEx pattern in python program to check that a string contains only a certain set of characters (in this case a-z, A-Z and 0-9).

Ans:

```
import re

pattern = re.compile("^[a-zA-Z0-9]+$")

test_string = "AbC123"

if pattern.match(test_string):

   Print ("String contains only a-z, A-Z, and 0-9.")

else:

   print ("String contains other characters.")
```

Question 2- Write a RegEx pattern that matches a string that has an a followed by zero or more b's

Ans:

```
import re

pattern = re.compile("ab*")

test_string = "abbbb"

if pattern.match(test_string):

   print ("String matches the pattern.")

else:

   print ("String does not match the pattern.")
```

Question 3- Write a RegEx pattern that matches a string that has an a followed by one or more b's

Ans:

```
import re

pattern = re.compile("ab+")
```

```
test_string = "abb"
if pattern.match(test_string):
    print("String matches the pattern.")
else:
    print ("String does not match the pattern.")
```

Question 4- Write a RegEx pattern that matches a string that has an a followed by zero or one 'b'.

Ans:

```
import re
pattern = re.compile("ab?")
test_string = "ab"
if pattern.match(test_string):
    print ("String matches the pattern.")
else:
    print ("String does not match the pattern.")
```

Question 5- Write a RegEx pattern in python program that matches a string that has an a followed by three 'b'.

Ans:

```
import re
pattern = re.compile("ab {3}")
test_string = "abbbb"
if pattern.match(test_string):
    print ("String matches the pattern.")
else:
    print ("String does not match the pattern.")
```

Question 6- Write a RegEx pattern in python program that matches a string that has an a followed by two to three 'b'.

Ans:

```
import re
pattern = re.compile("ab {2,3}")
test_string1 = "abb"
test_string2 = "abbb"
if pattern.match(test_string1):
    print ("String 1 matches the pattern.")
else:
    print ("String 1 does not match the pattern.")

if pattern.match(test_string2):
    print ("String 2 matches the pattern.")
else:
    print ("String 2 does not match the pattern.")
```

Question 7- Write a Python program that matches a string that has an 'a' followed by anything, ending in 'b'.

Ans:

```
import re
pattern = re.compile("a.*b$")
test_string1 = "axxxxxb"
test_string2 = "a1234b"
test_string3 = "abc"
if pattern.match(test_string1):
    print ("String 1 matches the pattern.")
else:
```

```
    print ("String 1 does not match the pattern.")

if pattern.match(test_string2):
    print ("String 2 matches the pattern.")
else:
    print ("String 2 does not match the pattern.")

if pattern.match(test_string3):
    print ("String 3 matches the pattern.")
else:
    print ("String 3 does not match the pattern.")
```

Question 8- Write a RegEx pattern in python program that matches a word at the beginning of a string.

Ans;

```
import re
pattern = re.compile("^\w+")
test_string = "Hello World!"
match_result = pattern.match(test_string)

if match_result:
    matched_word = match_result.group()
    print (f"The matched word at the beginning of the string is: {matched_word}")
else:
    print ("No word found at the beginning of the string.")
```

Question 9- Write a RegEx pattern in python program that matches a word at the end of a string.

Ans:

```
import re
pattern = re.compile("\w+$")
test_string = "Hello World!"
match_result = pattern.search(test_string)

if match_result:
    matched_word = match_result.group()
    print (f"The matched word at the end of the string is: {matched_word}")
else:
    print ("No word found at the end of the string.")
```

Question 10- Write a RegEx pattern in python program to find all words that are 4 digits long in a string.

Sample text- '01 0132 231875 1458 301 2725.'

Expected output- ['0132', '1458', '2725']

Ans:

```
import re
text = '01 0132 231875 1458 301 2725.'
pattern = re.compile(r'\b\d{4}\b')
matches = pattern.findall(text)
print ("Expected output:", matches)
```