Q1:-
Answer:-

```
import re
Import regex as re

def check_alphanumeric(string):
  """Checks if a string contains only alphanumeric characters."""
  pattern = r"^[a-zA-Z0-9]+$"
  return bool(re.match(pattern, string))

# Test cases
string1 = "Hello123"
string2 = "Hello@123"

if check_alphanumeric(string1):
  print(f"{string1} contains only alphanumeric characters.")
else:
  print(f"{string1} does not contain only alphanumeric characters.")

if check_alphanumeric(string2):
  print(f"{string2} contains only alphanumeric characters.")
else:
  print(f"{string2} does not contain only alphanumeric characters.")
```

Q.2:-
Answer:-

```
  """Checks if a string matches the pattern 'a' followed by zero or more 'b's."""
  pattern = r"ab*"

# Test cases
strings = ["ab", "abb", "abbbbb", "c", "abac"]
for string in strings:
  if bool(re.match(pattern, string)):
    print(f"{string} matches the pattern 'a' followed by zero or more 'b's")
  else:
    print(f"{string} does not match the pattern 'a' followed by zero or more 'b's")
```

Q.3:-
Answer:-

```
 """Checks if a string matches the pattern 'a' followed by one or more 'b's."""
  pattern = r"ab+"

# Test cases
strings = ["ab", "abb", "abbbbb", "c", "abac"]
```

```
for string in strings:
  if bool(re.match(pattern, string)):
    print(f"{string} matches the pattern 'a' followed by one or more 'b's")
  else:
    print(f"{string} does not match the pattern 'a' followed by one or more 'b's")
```

Q.4:-
Answer:-

```
 """Checks if a string matches the pattern 'a' followed by zero or one 'b'."""
  pattern = r"ab?"

# Test cases
strings = ["ab", "abb", "abbbbb", "c", "abac"]
for string in strings:
  if bool(re.match(pattern, string)):
    print(f"{string} matches the pattern 'a' followed by zero or one 'b'")
  else:
    print(f"{string} does not match the pattern 'a' followed by zero or one 'b'")
```

Q.5:-
Answer:-

```
import re
Import regex as re

def match_ab_pattern(string):
  """Checks if a string matches the pattern 'a' followed by exactly three 'b's."""
  pattern = r"ab{3}"
  return bool(re.match(pattern, string))

# Test cases
strings = ["a", "ab", "abb", "abbbb", "c", "aabbb"]
for string in strings:
  if match_ab_pattern(string):
    print(f"{string} matches the pattern 'a' followed by exactly three 'b's")
  else:
    print(f"{string} does not match the pattern 'a' followed by exactly three 'b's")
```

Q.6:-
Answer:-

```
import re
Import regex as re

def match_ab_pattern(string):
  """Checks if a string matches the pattern 'a' followed by two to three 'b's."""
  pattern = r"ab{2,3}"
  return bool(re.match(pattern, string))
```

```
# Test cases
strings = ["a", "ab", "abb", "abbbb", "c", "aabbb"]
for string in strings:
  if match_ab_pattern(string):
    print(f"{string} matches the pattern 'a' followed by two to three 'b's")
  else:
    print(f"{string} does not match the pattern 'a' followed by two to three 'b's")
```

Q.7:-
Answer:-

```
import re
Import regex as re

def match_a_anything_b(string):
  """Checks if a string matches the pattern 'a' followed by anything, ending in 'b'."""
  pattern = r"a[\w]+b$"
  return bool(re.match(pattern, string))

# Test cases
strings = ["aab", "abbx", "axxb", "a", "ab!", "xyzb"]
for string in strings:
  if match_a_anything_b(string):
    print(f"{string} matches the pattern 'a' followed by anything, ending in 'b'")
  else:
    print(f"{string} does not match the pattern 'a' followed by anything, ending in 'b'")
```

Q.8:-
Answer:-

```
import re
Import regex as re
def match_word_at_beginning(string):
  """Checks if a word is present at the beginning of the string."""
  pattern = r"\b\w+"
  return bool(re.match(pattern, string))

# Test cases
strings = ["apple banana", "hello world", "  spaced word", "123abc"]
for string in strings:
  if match_word_at_beginning(string):
    print(f"{string} - The first word matches the pattern (word at beginning)")
  else:
    print(f"{string} - The first word does not match the pattern")
```

Q.9:-

Answer:-

```
import re
import regex as re
def match_word_at_end(string):
  pattern = r"\w+\b"
  return bool(re.search(pattern, string))

# Test cases
strings = ["apple banana", "hello world", "spaced word", "abc123"]
for string in strings:
  if match_word_at_end(string):
    print(f"{string} - The last word matches the pattern (word at end)")
  else:
    print(f"{string} - The last word does not match the pattern")
```

Q.10:-

Answer:-

```
import re
import regex as re
text = "01 0132 231875 1458 301 2725."

# Find all 4-digit word characters (avoiding decimals)
pattern = r"\b\d{4}\b"
matches = re.findall(pattern, text)

print(matches)  # Output: ['0132', '1458', '2725']
```