Outputs

Question-1

```python
#Written by Aruntej
import numpy as np
given_vector = np.array([10, 11, 12, 13, 14])
print("Original array:- ")
print(given_vector)
p = 5
new_vector = np.zeros(len(given_vector) + (len(given_vector)-1)*(p))
new_vector[::p+1] = given_vector
print("\n New array:- ")
print(new_vector)
```

```
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PS C:\Users\Aruntej> python -u "c:\Users\Aruntej\Desktop\Task-8\Q1.py"
Original array:-
[10 11 12 13 14]

 New array:-
[10.  0.  0.  0.  0. 11.  0.  0.  0.  0.  0. 12.  0.  0.  0.  0.  0.
 13.  0.  0.  0.  0.  0. 14.]
PS C:\Users\Aruntej>
```

Question-2

```python
import numpy as np
A = np.array([1 ,0, 0, 0 ,1, 0])
B = np.array([0 ,0, 1, 1 ,0 ,1])
array_len=len(A)
for i in range(array_len):
    if A[i] == B[i] :       #checking each elemnt in arrays consecutively
        result=0
    else :
        result=1
if result==0:

    print("Arrays are equal ")
else :

    print("Arrays are not equal ")
```

```
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PS C:\Users\Aruntej> python -u "c:\Users\Aruntej\Desktop\Task-8\Q2.py"
Arrays are not equal
PS C:\Users\Aruntej>
```

Question-3

```python
#Written by Aruntej
import numpy as np
print(0 * np.nan)
print(np.nan != np.nan)
print(np.inf > np.nan)
print(np.nan - np.nan)
print(0.3 == 3 * 0.1)
```

```
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PS C:\Users\Aruntej> python -u "c:\Users\Aruntej\Desktop\Task-8\3.py"
nan
True
False
nan
False
PS C:\Users\Aruntej>
```

Question-4

```python
#Written by Aruntej
import pandas as pd
ser = pd.Series(['amrita', 'school', 'of', 'engineering' 'chennai' , 'campus'])
newSeries = ser.str.title()
print(ser)
print(newSeries)
```

```
PS C:\Users\Aruntej> python -u "c:\Users\Aruntej\Desktop\Task-8\Q4.py"
0              amrita
1              school
2                  of
3    engineeringchennai
4              campus
dtype: object
0              Amrita
1              School
2                  Of
3    Engineeringchennai
4              Campus
dtype: object
PS C:\Users\Aruntej>
```

Question-5(A) Addition of matrices

```python
#Written by Aruntej
import numpy as np
first_array = np.array([1 ,2, 3, 4 ,5, 6])
second_array = np.array([8 ,7, 6, 5 ,4 ,3])

print ("1st Array : ", first_array)
print ("2nd Array : ", second_array)

output = np.add(first_array,second_array)
print ("Output    : ", output)
```

```
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PS C:\Users\Aruntej> python -u "c:\Users\Aruntej\Desktop\Task-8\Q5-a.py"
1st Array :  [1 2 3 4 5 6]
2nd Array :  [8 7 6 5 4 3]
Output    :  [9 9 9 9 9 9]
PS C:\Users\Aruntej>
```

Question-5(B) Multiplication of matrices

```python
#Written by Aruntej
import numpy as np
matrix_1 = np.array( [ [2,2] , [2,2]  ] )
matrix_2 = np.array( [ [2,2] , [2,2]  ] )
matrix_3 = np.dot(matrix_1,matrix_2)
print(matrix_3)
```

```
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PS C:\Users\Aruntej> python -u "c:\Users\Aruntej\Desktop\Task-8\tempCodeRunnerFile.py"
[[8 8]
 [8 8]]
PS C:\Users\Aruntej>
```