Question 1

```
[13] import numpy as np
     a = int(input("Enter the first number : "))
     b = int(input("Enter the second number : "))
     c = np.array([i for i in range(a,(b+1),1)])
     n = 5
     d = np.zeros(len(c)+((len(c)-1)*n))
     d[0:len(d):(n+1)]=c
     print(d)
```

```
Enter the first number : 11
Enter the second number : 14
[11.  0.  0.  0.  0.  0. 12.  0.  0.  0.  0.  0. 13.  0.  0.  0.  0.  0.
 14.]
```

Question 2

```
import numpy as np

a = []
b = []

a = [int(item) for item in input("Enter the First Array : ").split()]
b = [int(item) for item in input("Enter the Second Array : ").split()]

a = np.array(a)
b = np.array(b)

comp = a == b
equal = comp.all()

print(equal)
```

```
Enter the First Array : 1 2 3 4 5 6 7 8
Enter the Second Array : 8 7 6 5 4 3 2 1
False
```

Question 2

```
import numpy as np

a = []
b = []

a = [int(item) for item in input("Enter the First Array : ").split()]
b = [int(item) for item in input("Enter the Second Array : ").split()]

a = np.array(a)
b = np.array(b)

comp = a == b
equal = comp.all()

print(equal)
```

```
Enter the First Array : 1 2 3 4 5 6 7
Enter the Second Array : 1 2 3 4 5 6 7
True
```

Question 3

[2] 0s

```
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)
```

```
nan
True
False
nan
False
```

Question 4

```
[19] import pandas as pd
     ser = pd.Series(['amrita','school','of','engineering','chennai','campus'])
     title = ser.str.title()
     a = ' '
     for i in title :
       a += i + " "
     print(a)
```

```
 Amrita School Of Engineering Chennai Campus
```

Question 5

1. addtion of 2 numpy arrays

```
import numpy as np

array1 = np.array([[1, 3, 3], [-4, 5, 0],[-2, 7, 21]])
array2 = np.array([[48, 5, -7], [6, 5, 9],[3, 6, 99]])

print ("1st array : \n", array1)
print ("2nd array : \n", array2)

added = np.add(array1, array2)
print ("added array : \n ", added)
```

```
1st array :
 [[ 1  3  3]
 [-4  5  0]
 [-2  7 21]]
2nd array :
 [[48  5 -7]
 [ 6  5  9]
 [ 3  6 99]]
added array :
  [[ 49   8  -4]
 [  2  10   9]
 [  1  13 120]]
```

2.Multiplying matrices

```
import numpy as np
mat1 = ([1, 6, 5],[3 ,4, 8],[2, 12, 3])
mat2 = ([3, 4, 6],[5, 6, 7],[6,56, 7])
mat3 = np.dot(m1,m2)
print("first matrix : \n",mat1)
print("second matrix : \n",mat2)
print("Resultant matrix : \n",m3)
```

```
first matrix :
 ([1, 6, 5], [3, 4, 8], [2, 12, 3])
second matrix :
 ([3, 4, 6], [5, 6, 7], [6, 56, 7])
Resultant matrix :
 [[ 63 320  83]
 [ 77 484 102]
 [ 84 248 117]]
```