St. Mary's School, Dwarka
Holiday Homework
Std. XII
Subject: Informatics Practices
Week 1
Worksheet 1

Topic :- Data Frame - Series **20**

Q1 (a) Answer the following questions : **2*5 = 10**

(i) What is the difference between a Series and Data Frame data structure of Pandas?

(ii) Consider the following command to generate a data series "b".
b=pd.Series([37,20,45.5,np.NaN,40],index=['a','b','c','d','e'])
Write the command to sort the values in ascending order for the above mentioned series. Also write the output generated after sorting.

(iii) Consider the following series d=pd.Series([40,30,45,69,50,39,60,35,70,25], index=['a1','a2','a3','a4','a5','a6','a7','a8','a9','a10'])
Write the output of the following:
a) print(d[-5:-9:-1])
b) d['a5']+=5
print(d)

(iv) What is Head and tail Function in Pandas data structures? What happens when no parameter is passed to these functions? Explain with an example.

(v) What is the difference between Where and Having clause of MySQL?
Give one example of each to support your answer.

Q1 (b) Give the output for the following: **2*5=10**

(i)
```
import pandas as pd1
s = pd1.Series ([1, 2, 3, 4, 5], index = ['a','b','c','d','e'])
print (s.head (3))
print (s.tail (3))
```

(ii)
```
import pandas as pd1
s = pd1.Series([1, 2, 3])
t = pd1.Series ([1, 2, 4])
u=s+t #addition operation
print (u)
u=s*t # multiplication operation
print (u)
```

(iii)
```
import pandas as pd1
s = pd1.Series ([1, 2, 3, 4, 5],
index = ['p','r','e','m','e'])
print (s[0])
print (s[:3])
print (s[-3:])
```

(iv)
```
import pandas as pd1
 import numpy as np1
 data = {'P': 0., 'R': 1., 'E': 2.,'M': 2.}
  s=pd1.Series(data,index=['b','c','d','a'])
 print(s)
```

(v)
```
import pandas as pd1
import numpy as np1
s = pd1.Series(5, index= [0, 1, 2, 3])
print(s)
```