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MONTHLY TEST JULY 2019  
Informatics Practice (XII C,D)

MM: 25

TIME:1 HRS

- Q.1 a) What will be the output for the given code: 2  
`import pandas as pd`  
`df = pd.DataFrame([[1, 2, 3], [4, 5, 6], [7, 8, 9]], columns=['A', 'B', 'C'])`  
`df.agg("sum", axis="rows")`
- b) For the given dataframe df, write a python statement to sort the dataframe on the ascending order of points: 2

	House	Year	Points
0	Raman	2010	500
1	Tagore	2010	600
2	Raman	2011	300
3	Tagore	2011	400
4	Ashok	2010	500

- Q.2 a) Write a python program in numpy to join a pair of matrices at the rows. Eg: 3  
 For given arrays arr1 and arr2

arr1

4	3	2
1	7	8

arr2

5	6	7
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the resultant array arr3 should be

arr3

4	3	2
1	7	8
5	6	7

- b) Write python statements to create a 3 x 3 matrix to hold the number 10 as the only element in each cell. 2
- c) For the given matrices m1 and m2 write a python statement to perform matrix multiplication between the two matrices. 2
- d) For the given Numpy array what will be the outputs: 2  
`import numpy as np`  
`a = np.array([[1,3,5,7],[5,6,7,8],[2,4,6,8]])`  
 i) `print(a[1:2])`  
 ii) `print(a[1:2,1:2])`
- e) Write a python statement to create a NumPy array to hold 10 evenly position numbers between 10 to 100, including 100. 2
- Q3 a) In linear regression which method is used to train the model with test data? 1
- b) What is the output of the method `numpy.cov(a,b)`? 1
- c) Which type of plot is used to draw a Linear regression model: 1  
 i) line plot and bar plot ii) Scatter plot and box plot  
 iii) line plot and scatter plot iv) None of the above
- d) What is the difference between a histogram and bar graph 2
- Q.4 a) Write the import syntax to use plotting features in python. 1
- b) What is the role of legends in a graph? Which method is used to draw a legend in pyplot? 2
- c) What is the need for the following functions in pyplot: 2  
 i) `xlabels()`  
 ii) `show()`  
 iii) `scatter()`  
 iv) `ylim()`