

**KSR HI-TECH CBSE SR.SEC SCHOOL**

**June Monthly Test**

**CLASS : XII** **TIME :11/2 hours**  
**SUBJECT :INFORMATICS PRACTICES** **MARKS :40**

**General Instruction:**

- This question paper contains 4 Questions.
- Answer the questions after carefully reading the text.

**1.**

- (a) Look at the following DataFrame and find the errors in the code given: (1)

**df:**

	Population	Avg_Income	Per_Capita_Income
Delhi	10927986	789456123	6.12354
Mumbai	12691836	652314987	5.23486
Kolkata	4631392	258963147	8.62495

**Code:** df.'Population'  
df[Population]  
df['Population', 'Avg\_Income']

- (b) What will happen if we apply min()/max() function to the name column of a DataFrame. (1/2)
- (c) What is the default value of the argument skipna in aggregate functions. (1/2)
- (d) What is the default value of the argument numeric\_only in aggregate functions. (1/2)
- (e) What is the use of min\_count() argument in sum(). (1)
- (f) What is the default value of q in quantile() function? (1/2)
- (g) **df** (2)

	Eng	Maths	Tamil
2018	75	95	75
2019	99	99	NaN
2020	98	95	95

**Find the output:**

```
print(df['Eng'].min())  
print(df[['Eng', 'Sci']].count())  
print(df.loc[2018].max())  
print(df.loc[2019:2020, 'Maths': 'Sci'].max())
```

- (h) What is a quartile? How is it related to quantile? How do you generate it in Pandas? (2)
- (i) Write Program to create a Series for the below data and print all the elements that are above the 75th percentile.(1, 2, 4, 5,6,8,10,12,16,20) (2)

**2.**

- (a) What is pivoting/data pivoting? (2)
- (b) What will happen in the pivoted table if it do not have a matching entry for the given row and column in original table? (1/2)
- (c) What will happen if we skip the 'values' argument in pivot() function? (1)
- (d) How does pivot-table() differ from pivot()? (2)
- (e) What will happen if we skip the 'argfunc' argument in pivot\_table() function? (1/2)
- (f) Write program to create and display the following dataframe(df) and to perform the below given operations. (4)

Item	Company	Rupees	USD
TV	LG	12000	700
TV	VIDEOCON	10000	650
TV	LG	15000	800
AC	SONY	14000	750

- (i) To compute total rupees per item.
- (ii) To compute number of company per item
- (iii) To compute total USD per company
- (iv) To compute total Rupees on two fields Item,Company.

3.

- (a) What is the default value for 'inplace' argument in sort\_values()? (1/2)
- (b) What is the default value for 'na\_position' argument in sort\_values()? (1/2)
- (c) Write program to sort the above dataframe by 'Company' in ascending order and USD in descending order. (1)
- (d) Does the hist() creates histogram for all the columns of a dataframe? (1/2)
- (e) What is a pipe technique? What function is used for the same in Pandas? (11/2)
- (f) When should pipe() be preferred over sandwiching of function call? (1/2)
- (g) Rewrite the following code using pipe() function:  
df.add(div(power(sqrt(n),2),3),100) (1)
- (h) Find the error in the following code:  
df.pipe(add(),3).pipe(power(),2) (1/2)
- (i) Which is the element function among the following: (1/2)  
(a) Apply (b) applymap() (c) pipe()
- (j) In what situation the function apply() will behave like applymap()? Give example. (2)
- (k) Write program using map functions to convert all negative numbers in a Data Frame to the mean of all the numbers. (2)

4.

- (a) Write command to print cumulative sum of Rupees and USD columns in the above dataframe. (2)
- (b) Can we combine groupby() and agg() in single command. Give example. (1)
- (c) Differentiate agg() and transform() (2)
- (d) df: (2)

	2016	2017	2020
Q1	34	27	51
Q2	25	28	52
Q4	29	40	75

Write program to reindex the above dataframe so that two new rows get added to it while the previous data is retained. Fill the new rows with value 10.0

- (e) Find the output: (1)

df1:

	2016	2017	2018
Q1	40	70	20
Q2	50	80	30
Q3	60	90	40

print(df.reindex\_like(df1))

- (f) How is reindexing and relabeling useful in dataframes? (2)