 **Indian School Al Wadi Al Kabir**

**Unit Test – 1**

INFORMATICS PRACTICES (Code: 065)

SET- 1

CLASS: XII Max. Marks:30

Date: 06/06/2024 Time: 1 hour

**General Instructions:**

1. This question paper contains four sections, Section A to D.
2. All questions are compulsory
3. Section A has 10 questions carrying 01 mark each.
4. Section B has 03 Very Short Answer type questions carrying 02 marks each.
5. Section C has 02 Short Answer type questions carrying 03 marks each.
6. Section D has 02 questions carrying 04 marks each.
7. All programming questions are to be answered using Python Language only.

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|  | **SECTION A** |  |
| 1. | Assuming the given series, named stud, which command will be used to print 5 as output?  Amit 90  Ramesh 100  Mahesh 50  john NaN  Abdul 89  Name: Student, dtype: int64  a. stud.index b. stud. length c. stud. values d. stud.size | 1 |
| 2. | What will be produced by the following python code? (Assuming that all necessary libraries and modules are imported)  series1 = pd.Series(np.array([31,28,31,30]), index = ["Jan", "Feb", "Mar"])  print(series1)  a. Error: Length of passed values is 4, index implies 3  b. No output  c. Jan 31  Feb 28  Mar 31  d. Jan 31  Feb 28  Mar 31  Apr NaN | 1 |
| 3. | What is the correct syntax to return both the first column and the second column in a pandas DataFrame df? (considering default labels for rows and columns)  a. df.loc [ : ,0,1]  b. df[[0,1]]  c. df.loc[[0-1]]  d. df.loc[[0,1]] | 1 |
| 4. | |  | | --- | | To rename the row indices ‘Emp1’ to ‘Manisha’, ‘Emp2’ to ‘Shreya’, ‘Emp3’ to  ‘Roshan’ and ‘Emp4’ to ‘Rakesh’ in a data frame EmpD, Which of the following  statement (a) to (d) will be used?    a. EmpDF=EmpDF.rename({‘Emp1’:’Manisha’, ‘Emp2’: ‘Shreya’, ‘Emp3’: ‘Roshan’,  ‘Emp4’: ‘Rakesh’}, axis = ‘index’)  b. EmpDF=EmpDF.rename({‘Emp1’:’Manisha’, ‘Emp2’: ‘Shreya’, ‘Emp3’: ‘Roshan’, 4’: ‘Emp ‘Emp4’: ‘Rakesh’}, axis = ‘rows’)  c. EmpDF=EmpDF.rename([‘Emp1’:’Manisha’, ‘Emp2’: ‘Shreya’, ‘Emp3’: ‘Roshan’,  ‘Emp’: ‘Rakesh’], axis = ‘index’)  d. None of the above | | 1 |
| 5. | The correct statement to read from a CSV file in a DataFrame is:  a. <DF>.read\_csv(<File>)  b. <file>. read\_csv( )(<DF>)  c. <DF>=pandas.read(<file>)  d. <DF>= pandas.read\_csv(<File>) | 1 |
| 6. | Which of the following command is used to display values of all the records having price>3?  a. print(df[df[‘price’]>3])  b. print(df[‘price’]>3)  c. print(df.price>3])  d. print(df(‘price’)>3) | 1 |
| 7. | Which of the following can be used to specify the data while creating a DataFrame?  a. Series  b. List of Dictionaries  c. Structured ndarray  d. All of these | 1 |
| 8. | Identify the command to display last 5 rows of the dataFrame.  a. Df1.head(5)  b. Df1.Tail(5)  c. Df1.bottom(5)  d. Df1.tail(5) | 1 |
| 9. | |  | | --- | | EApp is a dictionary with the following elements,  {’Photomath’:35,’Simply Piano’:20, ‘Google Classroom’:50,  ‘Kahoot’:30, ‘Duolingo’:40}  A series EduApp is created with the above dictionary ‘EApp’. Which statement  given below will produce the following output?  Output:  Simply Piano 20  Google Classroom 50  Kahoot 30  a. print(EduApp.loc[‘Simply Piano’:’Duolingo’])  b. print(EduApp.iloc[1:3])  c. print(EduApp.loc[‘Simply Piano’:’Kahoot’])  d. print(EduApp.iloc[2:5]) | | 1 |
| 10. | ASSERTION(A): The shape attribute returns the number of rows and  number of columns available in data frame.  REASONING (R): The shape attribute returns the values in form of list.  a. Both A and R are true and R is the correct explanation for A.  b. Both A and R are true and R is not the correct explanation for A.  c. A is True but R is False.  d. A is false but R is True. | 1 |
|  | **SECTION B** |  |
| 11. | Find the output of the following code:  import pandas as pd  x= {'IP': [50,10],’CS': [80,20],'ENG': [12,30],'PHY': [18,40]}  sub=pd.Series(x)  df=pd.DataFrame({'Count': sub})  print(df) | 2 |
| 12. | Consider a given Series, S1 with subject and marks where subject is index.  Subject  ENG 76  HINDI 88  MATH 60  SCI 85  SST 81  Name: Marks  Write a program in Python Pandas to create the series. Name the series with “Marks” label and index with “Subject” label. | 2 |
| 13. | Write the output of the given program:  import pandas as pd  S1=pd.Series([3,6,9,12],index=['a','b','c','e'])  S2=pd.Series([2,4,6,8],index=['c','d','b','f'])  S3=S1\*S2  S4=S2.add (S3, fill\_value=2)  print(S4)  print (S3. count ( ), S4.empty, sep=” and ”) | 2 |
|  | **SECTION C** |  |
| 14. | i. Write a program in Python Pandas to create the following DataFrame **sports**  from a List of Dictionary:  SportName Players Coachname  S001 Cricket 21 Rahul Dravid  S002 Football 25 Roshan Lal  S003 Hockey 40 Sardar Singh  S004 Cricket 19 Chetan Sharma  ii. Write Python statement to export the DataFrame “sports” to a CSV file named  sports.csv stored at D:\game. | 3 |
| 15. | Consider the given DataFrame shop and write a python command for the following tasks:   |  |  |  |  | | --- | --- | --- | --- | |  | APPLIANCE\_NAME | DISCOUNT | PRICE | | 0 | REFRIGERATOR | 15 | 19800 | | 1 | SMART PHONE | 20 | 12900 | | 2 | AIR CONDITIONER | 15 | 23500 | | 3 | WASHING MACHINE | 18 | 18900 | | 4 | WASHING MACHINE | 15 | 20110 |   i. Add a column called Special\_Quantity with the following data:  [62,26,12,32,48].  ii. Add a new Electronics item named ’TELEVISION’,12 having price 35600 and quantity as 23.  iii. Remove the column Special\_Quantity. | 3 |
|  | **SECTION D** |  |
| 16. | Consider the following Data Frame **ProjectDF**.    (A) Predict the output of the following python statements:  i. ProjectDF[‘PROJNAME’]  ii. ProjectDF.loc[‘M138’: ‘M164’]  (B) Write a python command for the following statements:  i. To display the project name of M143 and M164.  ii. To display the budget and sanction for all the projects. | 4 |
| 17. | Mr. Ravi, a data analyst has designed the DataFrame df that contains data about  Car Sales with ‘T1’, ‘T2’, ‘T3’, ‘T4’ as indexes shown below. Answer the  following questions:    (A) Predict the output of the following python statement:  i. df.index  ii. df [1:3]  (B)  i. Write Python statement to display the data of Col3 column of indexes T2 to T4.  **OR**  i. Write Python statement to compute and display the difference of data of Col2 column and Col3 column of the above given Data Frame and label it as a difference.  ii. Write a python command to change the column label of ‘Res’ to ‘Result’. | 4 |