Indian School Al Wadi Al Kabir
Unit Test – 1
INFORMATICS PRACTICES (Code: 065)

CLASS : XII   Max. Marks:30

Date: 25/05/2025   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.

	SECTION A	
1	Consider the following Series, ser: 0 578 1 235 2 560 3 897 4 118 What will be the output of following statements? print(ser.index) a. RangeIndex(start=0, stop=5, step=1) b. [578 235 560 897 118] c. [0,1,2,3,4] d. (0,1,2,,3,4)	1
2	Which command will be used to delete 2nd and 4th rows of the data frame. Assuming the dataframe name as DF with default index. a. DF.drop([1,3],axis=0) b. DF.drop([1,3],axis=1) c. DF.drop([2,4],axis=1) d. DF.drop([2,4])	1
3	The following code create a dataframe named 'D1' with _____ columns. import pandas as pd D1 = pd.DataFrame([[1,2,3]]) a. 1 b. 2 c. 3 d. 4	1

4.	Consider a Series 'mark': p 120 r 230 q 310 t 340 s 250 u 150 What will be the output of the following command? print(mark['s':'p':-2]-50)	1
5.	While creating a Series of N elements , If we do not explicitly specify an index for the data values, then by default indices range from ____ through ____ . a. 1 , N b. 0 , N - 1 c. 1 , N - 1 d. 0 , N	1
6.	Which of the following Python statements can be used to delete a column column_name from a DataFrame df? a. df.drop(columns=['column_name']) b. df.remove('column_name') c. df.del('column_name') d. df.pop('column_name')	1
7	Which of the following command will not show last five rows form Pandas Series named S1 a) S1[-5:] b) S1.tail() c) S1.tail(5) d)S1.tail[0:5]	1
8	What will be the output of the following python code ? import pandas as pd S=pd.Series([34,23,65,18,70],index=[1,2,3,4,5]) print(S[2:5]>50)	1
9	The following code create a DataFrame df with _____ rows and _____ columns. import pandas as pd df=pd.DataFrame([{'a':25,'b':50},{'a':15,'b':50,'c':30}]) a. 3 , 3 b. 2 , 3 c. 3 , 2 d. 2 , 2	1

10	**Assertion:** .loc() is a label based data selecting method to select specific row(s) or column(s) which we want to select in Pandas **Reason:** .iloc() cannot be used with default indices if customised indices are provided. i. Both A and R are true and R is the correct explanation for A . ii. Both A and R are true and R is not the correct explanation for A. iii. A is True but R is False. iv. A is false but R is True.	1
	SECTION B	
11	Find the output of the following code: import pandas as pd d1={'a':[1,2], 'b':[2,3]} d2={'a':[4,5], 'b':[6,7]} df1=pd.DataFrame(d1) df3=pd.DataFrame({'x':d1 , 'y':d2}) print(df1) print(df3)	2
12.	a. Write a Python Program to create a Pandas Series as shown below using a dictionary. Note that the left column is the index. Innova Toyota SX4 Suzuki C Class Mercedes Indigo Tata b. Write command to sort the above series in alphabetic order .	2
13	Write the output of the given program: import pandas as pd l1=[10,20,30,40,50] l2=[89,56,23,45,78] s1=pd.Series(l1, index=['a','b','c','d','e']) s2=pd.Series(l2, index=['a','b','e','g','k']) print(s1+s2) print(s2.mul(s1, fill_value=3)) print(s1[s1>25])	2
	SECTION C	
14.	i. Write a Python program to create the following DataFrame 'course' using a dictionary of series. <table><tr><td></td><td>course</td><td>fee</td></tr><tr><td>C1</td><td>Computer</td><td>40000</td></tr><tr><td>C2</td><td>AI</td><td>45000</td></tr><tr><td>C3</td><td>Web Design</td><td>35000</td></tr><tr><td>C4</td><td>Networking</td><td>30000</td></tr></table> ii. Write Python statement to export the DataFrame "course" to a CSV file named course.csv stored at D:\stream.	2+1

15.	Consider the following Dataframe, Employee: -	3

	Empid	Ename	Department	Salary
E1	101	Akash	Sales	80000
E2	102	Suresh	Manager	100000
E3	103	John	Executive	150000

Write commands to :

i.   Add a new column 'Bonus' to the Dataframe with all values as 2500.

ii. Add a new row with values (104 , 'Hitesh' ,'Executive', 200000)

iii. Delete the details of Akash and John .

SECTION D

16.	Consider the DataFrame df shown below.	4

	Name	Price	Rating
0	Note Book	100	5
1	Project File	120	7
2	Pen Drive	325	6
3	IP Book	500	3

Write Python statements for the DataFrame df to:

i.   a. Display name and rating columns of all the books.

   b. Display the data of the 'Name' column from indexes 1 to 3 (both included).

ii. Remove the column rating.

iii. Change the index of the dataframe to P, Q , R , S.

iv. Rename the column name 'Name' to 'Title' and index 'R' as 'RR'.

17	Consider the following DataFrame, DF	2+2

	Rollno	Name	Class	Section	CGPA
0	1	Geeta	IX	E	8.7
1	2	Preeti	X	F	8.9
2	3	Ravi	IX	D	9.2
3	4	Lakshay	X	A	9.4

a. Write statements for the following:

   1.   Display the name and CGPA of indices 1 to 3 .

   2.   Display the name and section of students whose CGPA is greater than 9.

b. Write the output of the following statements:

   i.   print(DF[2:3])

   ii.   print(DF.iloc[1:3, 1:3])

   iii.   print(DF.loc[: , 'Rollno']>2)

   iv.   print(DF.tail(-3))