



**INDIAN SCHOOL SOHAR
FINAL EXAMINATION (2019-20)
INFORMATICS PRACTICES**

CLASS: XI
DATE: 18/02/2020

MAX. MARKS: 70
DURATION: 3HRS

Instructions:

- a. All the questions are compulsory.**
b. Answer the questions after carefully reading the text.

1. Answer the following questions:

- | | |
|---|---|
| a. What are docstrings? | 1 |
| b. Differentiate between list and dictionary | 2 |
| c. What is a function? How is it useful? | 2 |
| d. Differentiate between append and extend in list. | 2 |
| e. What is the function of CPU in a computer system? What are its subunits? | 2 |
| f. Evaluate: $50/(5-(3+1))$ or $3 < 5$ | 1 |
| g. Write the equivalent python expression: | 1 |
| i) $x = a^2 + b^2 $ ii) $2 - ye^{2y}$ | |

2.

- | | | | | | | | | | |
|---|-----|---|-----|-----|-----|-----|-----|-----|--|
| a. Which of the following statement is not correct with respect to python pandas? | 1 | | | | | | | | |
| <ul style="list-style-type: none"> • It can read and write in many different data formats. • It cannot calculate data across rows and down columns. • It has functionality to find and fill missing data. | | | | | | | | | |
| b. Find the right statement with respect to Numpy array. | 1 | | | | | | | | |
| <ul style="list-style-type: none"> • It contains elements of heterogeneous types • It does not support vectorized operation • It contains elements of homogenous types. | | | | | | | | | |
| c. How are NumPy arrays different from series objects? | 2 | | | | | | | | |
| d. Write python code to create an ndarray with 7 values falling in range 1.5 to 6. | 2 | | | | | | | | |
| e. Write python code to create the following Series (obj1). | 2 | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-right: 20px;">Jan</td> <td>5</td> </tr> <tr> <td>Feb</td> <td>7.5</td> </tr> <tr> <td>Mar</td> <td>NaN</td> </tr> <tr> <td>Apr</td> <td>3.8</td> </tr> </table> | Jan | 5 | Feb | 7.5 | Mar | NaN | Apr | 3.8 | |
| Jan | 5 | | | | | | | | |
| Feb | 7.5 | | | | | | | | |
| Mar | NaN | | | | | | | | |
| Apr | 3.8 | | | | | | | | |
| f. Using the above Series data given in Q2(e), write code to : | 2 | | | | | | | | |
| i) Check the presence of NaNs in the series | | | | | | | | | |
| ii) Display the bottom 2 rows of the series | | | | | | | | | |

g. What will be the output of the following program: 2

```
import pandas as pd
dict1={'Student':['Neethu','Mohit','Jamaal'],'Score':[78,98,85.5],'Class':['XI','XII','X']}
dtf=pd.DataFrame(dict1)
print(dtf)
```

h. What will be the output of: 2

i) dtf[0:1] ii) dtf.shape

i. Using the above Dataframe data given in Q2(g), answer the following:

i) List the details of Mohit and Jamaal. 1

ii) Add a new column age with value '16' 1

iii) List the various classes 1

iv) Delete the Score details 1

j. Find the errors from the following code segment and rewrite the corrected code: 2

```
Import pandas as pd
dtf2=pd.DataFrame(dtf,column=['one','two','three'])
print(Dtf2)
```

3.

a. Predict the output after execution of the following code: 2

```
x=3
for y in range(0,10,2):
    if x>=y:
        print(y+x,y, sep=" ")
```

b. Rewrite the following code using 'for' loop: 2

```
i=4
while i<9:
    print(i)
    i=i+2
```

c. Find the errors from the following code segment and rewrite the corrected code: 2

```
Str='#"
Pattern=" "
a=0
While a<5:
    Pattern+=Str
    print(pattern)
    a+=1
```

d. Write code to perform the following: 2

- Worker={'name':'jacob','salary':10000,'age':25}
 - i) Add a new element with key-“department” and value “production”
 - ii) Change the salary of Jacob to 15000
- List1=['a','e','o','u']
 - i) To insert an element 'i' to the third position of the list
 - ii) To sort the above list in descending order.

e. Write a program in python to calculate the mean of a given list of numbers. 2

f. Draw a flowchart to determine whether a number is divisible by another number or not. 2

g. Write a program to print the sum of the following series for n number of terms: 2

$$\frac{1}{8} + \frac{1}{27} + \frac{1}{64} + \dots\dots\dots$$

h. An online shopping site is giving a discount for new year. The discount is given based on the mode of payment. Write a program to calculate the Final Bill Amount after discount.

Mode of payment	Discount
Visacard	2% of rate
Paypal	10% of rate
Mobile Wallets	5% of rate
Mastercards	3% of rate

- i) The user should input the mode of payment and its rate. 1
- ii) Calculate and display the discount amount as per the above criteria. 2
- iii) Calculate and display the Final Bill Amount. 2

(Final Bill Amount= Rate - discount Amount)

4.

a. Write any two examples each for the following commands? 2

- i)DDL ii)DML

b. Create a table Stock based on the structure given below: 2

Stock: Table structure

Column name	Data Type	Constraint
Id	Integer(4)	Primary key
Name	Varchar(15)	Not null
Company	Varchar(20)	
Price	Integer(4)	

Stock: Table

Id	Name	Company	Price
101	Maggi	Nestle	40
102	Cake	Elite	75
103	Biscuit	Hide and Seek	25
104	Ketchup	Nestle	
105	Chocolate	Cadbury	30

Supplier: Table

Sno	Id	Qty	City
001	102	200	Mumbai
002	105	150	Delhi
003	101	100	Kolkata
004	105	50	Delhi

c. Write SQL Commands for the following:

- i) Insert a new row with the following values into the Stock table: 1
106, Nutella, 50
- ii) Display the name and quantity of Nestle products whose price is known. 1
- iii) List the name and price of items whose quantity lies in range 100 to150. 1
- iv) Display the city of items whose name starts with 'C' or 'K' with quantity less than 100. 1
- v) Display a report: <name> supplied by <Company>cost rs<price> 1
- vi) Delete the details of ketchup and chocolate. 1

5.

- a. What is antivirus software? 1
- b. What is Digital Signature? 1
- c. What types of damages are caused by spyware to your computer? 2
- d. What is Spam? Why has it become a big internet issue? 2
- e. What is Cyber Crime? How can you report it? 2
- f. What are the measures (any four) to be taken to ensure confidentiality of information? 2
