

PUSASQF 405
Application of IT-Basics of Python

Time: 2 hours
Total Marks: 60 marks

Note:

- 1) The candidate has option to either attempt question 3A or question 3B. Rest all questions are mandatory.
- 2) Numbers to the right indicate full marks.
- 3) The candidates will be provided with the formula sheet and graph papers (if required) for the examination.
- 4) Use of approved scientific calculator is allowed.

Q1. Attempt All Questions

A) 5 Marks

Write a python program to print the factorial of a given number.

B) 5 Marks

Write a python program to calculate the total amount to be paid if some principal amount is borrowed after a particular time(t) at rate of interest(r) by taking input of principal amount, rate of interest and time.

Note: Make a function to implement above functionality.

(Simple Interest= $P*r*t/100$. Total Amount= P +Simple Interest)

C) 5 Marks

Write a Pandas program to split the following given dataframe into groups based on school code and class.

```
student_data = pd.DataFrame({
    'school_code': ['s001','s002','s003','s001','s002','s004'],
    'class': ['V', 'V', 'VI', 'VI', 'V', 'VI'],
    'name': ['Alberto Franco','Gino Mcneill','Ryan Parkes', 'Eesha Hinton', 'Gino
    Mcneill', 'David Parkes'],
    'date_Of_Birth':
    ['15/05/2002','17/05/2002','16/02/1999','25/09/1998'
    , '11/05/2002','15/09/1997'],
    'age': [12, 12, 13, 13, 14, 12],
    'height': [173, 192, 186, 167, 151, 159],
    'weight': [35, 32, 33, 30, 31, 32],
    'address': ['street1', 'street2', 'street3', 'street1', 'street2', 'street4']],
    index=['S1', 'S2', 'S3', 'S4', 'S5', 'S6'])
```

Q2. Attempt All Questions

A)

5 Marks

Generate a Python list of all the prime numbers between 4 to 100 (inclusive).

B)

5 Marks

Write a program to print the list containing the running addition of below list.

input_list=[1,9,11,20,12,18,15]

output_list=[1,10,21,41.....]

Note: Running Addition= current item+previous sum

C)

5 Marks

Write a program to print the minimum number present in the list using for loop.

input_list=[1,18,13,22,24,8,5]

Q3. Attempt Either Q3A or Q3B

A)

30 Marks

1. Predict “price” of the given data (kc_house_data.csv) using Linear Regression and extract the output file to .csv file.
2. Calculate the RMSE.
3. Find the insightful summarised data from the above data.
4. Also draw a graph on the basis of above insights.

Note: Perform preparation, cleansing and encoding wherever required.

B)

30 Marks

1. Predict “Status” of the given data (Dataset_spine.csv) using Logistic Regression and extract the output file to .csv file.
2. Calculate the accuracy, precision and Recall score.
3. Find the insightful summarised data from the above data.
4. Also draw a graph on the basis of above insights.

Note: Perform preparation, cleansing and encoding wherever required.