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2nd Unit Test 2018-19

Class 11th (Eleventh)

Subject : Informatics Practices(065) Max.Mark : 50

Time : 1½ hrs.

Instructions :

(i) All ques. Are compulsory

(ii) Programming language Python/SQL

Q1. Write code to Import an entire module named as "Calculator.py" in your program.[1]

ANS. import Calculator as cal

OR

Import Calculator

Q2. Write code to Import single object/function viz. **"sqrt()"** from module named as **"Calculator.py"** in your program. [1]

ANS. from Calculator import sqrt

Q3. Write two basic difference between **NumPy** Array and **Python List** . [1]

ANS.

NumPy Array	List
Immutable	Mutable
Similar type of Datatype	May be different type of Datatype
2D	1D

Q4. Write python Script in “Arr.py” to convert a given List named as **“AList”** into NumPy array and display. [2]

ANS.
```
import numpy as np
lst=[1,2,3,4,5]
nr=np.array(lst)
```

Q5. Write python script to read lists from user and display it in 2D array using NumPy array. [3]

ANS.
```
import numpy as np
Lst1=eval(input("Enter List 1: "))
Lst2=eval(input("Enter List 2: "))
Lst3=[Lst1, Lst2]
nr=np.array(Lst3)
print(nr)
```

Q6. Give code to create empty NumPy Array with 3 rows and 2 columns. [1]

ANS.
```
a = np.empty([3, 2], dtype = int)
```

Q7. Give code to create NumPy Array with 3 rows and 2 columns filled with 1. [1]

ANS.
```
a = np.ones([3, 2], dtype = int)
```

Q8. Ramesh wants to create an array with 5 different values between 10 to 20. Suggest him the python code. [2]

ANS .
```
x = np.linspace(10, 20, 5,  dtype=int)
```

Q9. Name the basic Data Structure of Panda discussed in your class. [2]

ANS. (i) Series

(ii) DataFrame

Q10. Write code to create a series upto 10 using Panda series. [2]

ANS. a=pd.Series(range(10))

Q11. See the following output (series) and write python code for this output : [2]

JAN 31
FEB 28
MAR 31
APR 30

hint : it is a Panda Series having day=[31,28,31,30] mon=['JAN', 'FEB', 'MAR', 'APR']

ANS.
```
import pandas as pd
mon=['JAN','FEB','MAR','APR']
day=[31,28,31,30]
nr=pd.Series(data=day, index=mon)
print(nr)
```

OR

```
import pandas as pd
mon=['JAN','FEB','MAR','APR']
day=[31,28,31,30]
nr=pd.Series(day, mon)
'''By default 1st day will be treated as data & 2nd mon will be treated as index'''
print(nr)
```

Q12. Give the output of following code : [2*3]

(i)
```
Lst=[5,6,7,8]
obj=pd.Series(data=(Lst))
print(obj[2:3])
```

(ii)
```
Lst=[5,6,7,8]
obj=pd.Series(data=(2 * Lst))
print(obj)
```

(iii)
```
Lst=[5,6,7,8]
obj=pd.Series(data=(Lst))
print(obj  * 2)
```

ANS. (i) 2 7

(ii)
0 5
1 6
2 7
3 8
4 5
5 6
6 7
7 8

(iii)
0 10
1 12
2 14
3 16

Q13. Look at the following output(as DataFrame) and write python script to display the same : [4]

	Student	Marks	Subject
0	Surabhi	50	Physics
1	Komal	65	Chemistry
2	Pankaj	60	Maths
3	Seema	80	CS
4.	Kalpana	90	IP

support : use dictionary using Lists

ANS.
```
import pandas as pd
dict={'Student'   :['Surabhi','Komal','Pankaj','Seema','Kalpana'],
      'Marks'    :[50,65,60,80,90],
       'Subject' :['Physics','Chemistry','Maths','CS','IP']
     }
df=pd.DataFrame(data=dict)
print(df)
```

Q14. Look at the following code and give the output : [3]

```
import numpy as np
import pandas as pd
nArr=np.array([[1,2,3],[5,6,7], [8,9,10]])
dtf=pd.DataFrame(nArr,columns=['One','Two','Three'])
print(dtf)
```

ANS.

	One	Two	Three
0	1	2	3
1	5	6	7
2	8	9	10

Q15. Take the data frame **'dtf'** from ques. No. (**Q14**) and write python code to display only **'One'** and **'Three'** columns. [2]

ANS.

```
dtf.iloc[:,[0,2]]
```

Q16. Take the data frame **'dtf'** from ques. No. (**Q14**) and give the output of following code : [2]

```
>>> print(dtf.count())
```

ANS.

```
One    3
Two    3
Three  3
```

Q17. Write Python code(panda) for the following purpose :

(i) To read a **.csv** file to generate dataFrame [1]

(ii) To write a .csv file from dataFrame with header [1]

ANS. (i)

```
import csv
import pandas as pd
d=pd.read_csv("book1.csv")
print(d)
```

(iii)

```
dtf.to_csv("book2.csv", header=True)
'''dtf is already created DataFrame'''
```

Q18. Give the definition of following in respect of Database

(i) Primary key [1]

(ii) Alternate key [1]

(iii) Foreign Key [1]

ANS. (i) A Key which can identify each record uniquely and selected as primary key
(ii) Candidate key which is not selected as Primary
(iii) Unique/Primary key of Child Table lookup the unique key of parent table is known as Foreign key.

Q19. Give the difference between Primary Key and Unique Key in Database. [1]

ANS.

Primary Key	Unique Key
Must not be null	May have almost 1 null

Q20. Name any 04 data types in SQL. [1]

ANS. char, int, float, date, varchar

Q21. A table in a database having 10 fields and 500 records, then you added 5 more records. Now tell the Degree and Cardinality of that table. [1+1]

ANS. Degree : 10
Cardinality : 505

Q22. Give SQL command to create database 'MYDB' in MySql. [1]

ANS. create database MYDB

Q23. Write SQL command to use above database 'MyDB'. [1]

ANS. use myDB

Q24. Give the size of **"Name"** variable in following two different way of creation after entering data **"SUMAN"** in SQL. [2]

(i) NAME CHAR[30]

(ii) NAME VARCHAR[30]

ANS. (i) 30 bytes

(ii) 06 bytes

Q25. Name the different constraints in SQL (Database) [2]

ANS. (i) Primary Key

(ii) Unique

(iii) Not Null

(iv) Check

(v) Default

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