RAVI MATHS TUITION & TEST PAPERS , WHATSAPP 8056206308

12TH CBSE COMPUTER SCIENCE DPP 4

12th Standard

Computer Science

2 Marks 19 x 2 = 38

1) Out of the following, find those identifiers, which cannot be used for naming variables or functions in a Python program: Total * Tax,While, Class, Switch, 3rd Row, finally, Column () 31, Total.

Answer : Total *Tax,3rd Row,Column () 31, finally

2) Highlight the literals in the following program and also predict the output. Mention the types of variables in the program.

```
a=3
b='l'
c=a-2
d=a-c
e="Kathy"
f='went to party'
g='with Sathy'
print (a,g,e,f,a,g,",",d,g,",",c,g,"and his",e,f)
```

Answer : a,c,d = integer
b,e,f,g = string
Output: 3 with Sathy Kathy went to party 3 with Sathy, 2 with Sathy , 1 with Sathy and his Kathy went to party

3) Write the output from the following code:

```
y = 2000
if (y%4==0):
print ("LeapYear")
else:
print ("Not leap year")
```

Answer : Leap Year

4) Consider the following list 95 79 19 43 52 3
Write the passes of bubble sort sorting the list in ascending order till the 3rd iteration.

Answer : [79,19,43,52,3,95] - Pass 1
[19,43,52,3,79,95] - Pass 2
[19,43, 3, 52, 79, 95] - Pass 3

5) What are Python modules?

Answer : Modules are Python .py files that consist of Python code. Any Python file can be referenced as a module. Modules can define functions, classes and variables that you can reference in other Python py files via the Python command line interpreter.

6) What is the use of negative indices in slicing?

Answer : Python counts from the end (right) if negative indices are given.
(eg) S = "Hello"
print (S[:-3]) > > He
print (S[-3:]) > > llo

7) 17.Write the output of the following code snippet

```
tup = ( 'geek',)
```

```
n=5
for i in range(int(n)):
tup = (tup,)
print(tup)
```

Answer : (('geek' ,),)
(((,geek',),),)
((((('geek' ,),),),),)
(((((('geek' ,),),),),),)
((((((('geek' ,),),),),),),)

8) Rewrite the following for loop into while loop:

```
for a in range(90,9,-9):
print(a)
```

Answer :

```
a = 90
while a > 9:
print(a)
a = a -9
```

9) Write a program to find the sum of all digits of the given number.

Answer :

```
n = input("Enter the number:")
sum=o
whileln > 0):
a=n
sum = sum + a
n=n//10
print ("Sum of digits=" ,sum)
```

10) How can we import a module in Python?

Answer : 1. **using import**

Syntax:

import < modulename1 > [,,< modulename2 > ,....

Example:

import math, cmath

2. **using from**

Syntax:

from < module name > import < function1 > [, < function2 > ,..... < functionn >] **Example**:

from fib import fib, fib2

11) Write the corresponding Python expression for the following mathematical expressions:

i) $2\text{-}ye^{2y}$ +4y ii) Ie^{x}- x^2 - xI

Answer : i) 2-y * (math.exp(2*y))+4*y

ii) math.fabs(exp(x)-x**2-x)

12) What is name resolution rule? Explain it.

Answer : Whenever a name reference is encountered in a program, Python follows name resolution rule or LEGBrule. For every variable Python

(i) Check within its Local environment (legb), and uses it if available. Otherwise it moves to Enclosing environment.

(ii) Then checks the Enclosing environment (legb) and uses it.if available. Otherwise it moves to Global environment.

(iii) Now it checks the Global environment (legb) and uses the variable if available otherwise it moves to Built-in Environment.

(iv) At last it checks the Built-in environment (legb) and uses the variable otherwise it reports the following error:

name < variable = not defined.

13) Write a void function that receives a 4 digit number and calculates the sum of squares of first two digits of the number and last two digits of the number egoif 1233 is passed as argument then function should calculate $(12)^2+(33)^2$

Answer :
```
def calcsquareDigits(num):
sum = ((num% 100)**2)+ (int((num/100))**2)
print ("sum of squares of first two and last two digits is",sum)
return
```

14) Explain Scope of Variables.

Answer : All variables in a program may not be accessible at all locations in that program. This depends on where you have declared a variable.
The scope of a variable determines the portion of the program where you can access a particularidentifier. There are two basic scopes of variables in Python:
(1) Global variables
(2) Local variables

15) Identify the following function definitions as void or non-void function.
(i) def fun():
print("Hello!")
(ii) def fun():
print("Hello!")
return(1)
(iii) def fun():
print("Hello!")
retum(1)
(iv) def fun():
return(2)
print("Hello")

Answer : (i) and (ii) are void function
(iii) and (iv) are non-void functions

16) Given a text file car.txt following information of cars carNo, carname, containing mileage. Write a Python function to display details of all those cars whose mileage is from 100 to 150.

Answer :
```
def display():
file=open(' car. txt', 'r')
lines=file.readlines()
file.close()
for line in lines:
x = line.split()   # split the line
mileage = (int) (x[2])
if mileage > 100 and mileage < =150:
print (line)
display()
```

17) Write a function to read the content of a text file "DELHI.txt" and display all those lines on screen, which are either starting with 'D' or 'M'.

Answer :
```
def CountDorM():
count=0
with open('DELHI.txt','r') as f:
while True:
line=f.readline()
if not line: break
if line[0]=='D' or line[0]=='M':
count = count+1
if count == 0:
print ("no line starts with D or M")
else:
print ("count=" ,count)
```

18) Write statements to display the position of the file pointer after reading two lines from a file linked to file object named fn.

Answer :
```
i = 0
for i in range (2):
In = fn.readline ( )
print ("The file pointer is now at", fn.,tell( ))
```

19) Write any two needs for a data file.

Answer : (i) It is a convenient way to deal with large quantities of data.
(ii) To avoid input of data multiple times during program execution.

3 Marks 4 x 3 = 12

20) How many times will the given loops iterate.

(i)
```
j=0
while (j < 50):
print ("Hello World")
j=j+1
```
(ii)
```
j=25
while (25< =j< =30):
print ("Temp variable =",j)
j=j+1
```
(iii)
```
#Assume Boolean variable b is not known.
b= True
sum=0
while b:
sum=sum+5
print (sum)
if (b or not b):
break
```

Answer : (i) 50 times.
(ii) 6 times
(iii) 1 time

21) Write a program that reads three numbers and prints them in ascending order.

Answer : x = int (input ("Enter First number:"))
y = int (input ("Enter Second number:"))
z = int (input ("Enter Third number:"))
if x < y and x < z :
if y < z :
f,s,t = x,y,z
else:
f,s,t = x,z,y
elif y < x and y < z:
if x < z :
f,s,t = y,x,z
else:
f,s,t = y,z,x
else:
if x < y :
f,s,t = z,x,y
else:
f,s,t = z,y,x
print ("Numbers in ascending order are:", f,s,t)

22) Write a method in Python to find and display the prime number between 2 to N. Pass N as argument to the method.

Answer : def prime (N) :
for a in range (2, N) :
prime = 1
for i in range (2, a) :
if a%i ==0:
prime = 0
if prime == 1:
print (a)
OR
def prime (N) :
for a in range (2, N) :
for i in range (2, a) :
if a%i = = 0:
break
else:
print (a)

23) A file sports.dat contains information in following formal Event Participant.
Write a function that would read contents from file sports.dat and creates a file named Athletics. dat copying only those records from sports.dat where the event name is "Athletics"

Answer : def athletics:
file1 = open ("sports.dat",'r')
file2 = open ("Athletics.dat",'w')
ree = " "
while rec! = " ":
rec = file1.readlne ()
sport = rec.split('r:')
if sport[o] == "Athletics":
file2.write (rec)
file2.write ('\n')
else:
pass
file1.close()
file2.close()
return