

MODEL TEST PAPER - I
CLASS XI
COMPUTER SCIENCE (083) PYTHON

Time: 3 hrs

M.M: 70

Note: Programming Language: Python

Do all questions

Attempt the answers serial wise

Total printed pages are 5

Q1. a. List one similarity and one difference between List and Dictionary datatype. (1)

b) What is the difference between break and continue statement? Give an example. (2)

c) What is the difference between calling function with keyword arguments and default arguments? Give an example. (2)

d) What is the function of findall() function in regular expressions? Give an example. (1)

(e) Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. (2)

```
def Tot(Number)                #Method to find Total
    Sum=0
    for C in Range (1, Number+1):
        if C%2=0:
            Sum+=C
    return Sum

print Tot[3]                    #Function Calls
```

f) Observe the following Python functions/constants and write the name(s) of the module(s) to which they belong: (2)

a. ascii_uppercase() b. compile() c) uniform() d) pi

Q2a) Find the output: (6* 1 =6)

```
i)    import random
n=random.randrange(10,3,-2)
print n
ii)   import re
r1=re.finditer('sing{0,2}','singers singg well')
for I in r1:
    print I.group(), I.span()
iii)  str='Educating the world in different spheres'
print "The position of 'in' at:", str.find('in')
iv)   str='board exam'
print str.split('a')
```

v) `p=[1,7,2,6,4,9]`

`p.insert(3,2)`

`print p`

vi) `n=[1,4,2,6,9,5]`

`print n[:4]`

`print n[-1:-4:-2]`

b) Define a function to return the sum of the series given below where `n` is passed as an argument to this function, where sum of the series will be (3)

$(1)+(1+3)+(1+3+5)+(1+3+5+7)+\dots$ upto `n` terms

c) Write a user defined function `findname(name)` where `name` is an argument in Python to delete phone number from a dictionary phonebook on the basis of the name, where `name` is the key. (2)

d) Write a python function `revno (n)` where `n` is the number passed to it, the function will return the reverse of this number(e.g if no is 123 then reversed no. will be 321). (2)

e) Write a user defined function in Python that inputs a string, the function will print the count of words starting with the letter 'H'(not case sensitive). (2)

f) What is the use of range function? Explain with an example. (1)

Q3a) Find the Output:

(i) `def small(a,b):`

`if a<b:`

`return a`

`else:`

`if a==b:`

`return 0`

`else:`

`return b`

`def main():`

`x,y=5,8`

`z=small(x,y)`

`print "x=",x,"y=",y`

`y=z-1`

`z=small(y,x)`

`print x,y`

main()

ii) `print int (7.0+0.1)` (1 ½)

`print str (1.2 * 3.4)`

`print float ("77"+"0")`

iii)def **makenew**(mystr): (2)

```
    chgstr = "  
    count = 0  
    for i in mystr:  
        if count%2 ==0:  
            chgstr = chgstr +str(count)  
        else:  
            if i.islower():  
                chgstr = chgstr +i.upper()  
            else:  
                chgstr = chgstr +i  
        count +=1  
    chgstr = chgstr +mystr[1:2]  
    print "The new string is :", chgstr
```

makenew('cARmeL')

iv) a="india" (2)

```
l=len(a)  
for i in range(len(a)):  
    for k in range(0,i+1):  
        print a[k],  
    print
```

v) d={"abc": 10, "def":25, "ghi":79} (1)

```
s=0  
for i in d:  
    s+=d[i]  
print s
```

b) Do the following conversions: (5x1=5)

1. $(68)_{10}$ to $(?)_2$
2. $(2AB)_{16}$ to $(?)_{10}$
3. $(36)_8$ to $(?)_2$
4. $(1101101011)_2$ to $(?)_{16}$
5. $(66)_{10}$ to $(?)_8$

c) What are the possible outcome(s) executed from the following code? Also specify the maximum and minimum values that can be assigned to variable NUMBER. Justify. (2)

```
import random  
STRING="CBSEONLINE"  
NUMBER=random.randint(0,3)  
N=9  
while STRING[N] !='L':
```

```
    print STRING[N]+STRING[NUMBER]+'#',  
    NUMBER=NUMBER+1  
    N=N-1
```

- (i) ES#NE#IO# (ii) LE#NO#ON# (iii) NS#IE#LO# (iv) EC#NB#IS#

d) Define a function prime which will be passed as an argument n and this function will print all prime numbers till n. (3)

Q3a) Create a python comprehension list, where P=[10,12,15,17,18] (2x1=2)

- i) From P create another list such that only odd nos comes from P
- ii) From P create a new list such that they are twice the value of P

b) When is else not executed with a loop? (1)

c) Define a method which will be passed as an argument a matrix along with rows and columns the method will interchange the first row elements with last row elements. (3)

e.g if the matrix contains

1	2	3		7	8	9
4	5	6	then after swapping it will be	4	5	6
7	8	9		1	2	3

d) Define a function which will print Fibonacci series till n passed as argument to the function. (2)

Q4a) Write the function / method to do the following: (6x 1/2 =3)

- i) To Convert the first letter of a word in uppercase
- ii) To check for an alphabet or a digit
- iii) To trim the spaces both from left and right side.
- iv) To split the string at the first occurrence of a separator.
- v) To sort a list in the reverse order
- vi) To remove an item from the list at the end

b) Which operation will result in the answer as 8? (1)

- i) $65 // 8$ ii) $17 \% 9$ iii) $2 * * 4$ iv) $64 * * 0.5$

c) According to the precedence of operators solve the following and write the final answer (show steps according to precedence of operators) (1 1/2)

$19 \% 4 - 17 / 2 * 3 + 2 * * 3 + 5 // 2$

Q5a) What is NoSQL database? Explain its advantages. (2)

b) Differentiate between a collection and a document in MongoDB? (2)

c) Consider the following tables CUSTOMER and MOBILE. Write SQL commands for the statements (i) to (vi) and give outputs for SQL queries (a) to (d) (6+2=8)

TABLE : CUSTOMER

ID	Cname	Activation_date	Validity (in days)	Amount	Connection
101	Preeti	04-Jun-09	365	330	Hutch
102	Sumit	12-Feb-08	60	180	Airtel
103	Aamir	14-May-09	180	250	Aircel
104	Mukul	30-Jan-08	30	100	Bsnl
105	Ambani	08-Mar-07	365	310	Reliance
106	Rani	02-Apr-09	90	210	Airtel
107	Vijay	12-Sep-09	60	150	Bsnl

TABLE : MOBILE

ID	Make	Model_No
101	Nokia	N76
102	LG	RD3500
104	Nokia	E61
105	Sony	K310i
107	Motorola	W756i

- (i) To display the records of those customer who take the connection of Bsnl and Airtel in ascending order of Activation date.
- (ii) To decrease the amount of all customers of Reliance connection by 500, where amount is NULL.
- (iii) Count the no. of companies giving connection from CUSTOMER table whose customer name starts with 'P'.
- (iv) To display the ID and Cname from table Customer and Make from table Mobile, with their corresponding matching ID.
- v) Display the details of the customer whose activation date is before 2008
- (vi) To count the number of records for each connection.
- (a) select Cname , Make from Customer, Mobile where Customer.ID = Mobile.ID;
- (b) select Connection , sum(Amount) from Customer group by Connection ;
- (c) SELECT COUNT(DISTINCT Make) FROM Mobile; .
- (d) SELECT AVG(Amount) FROM Customer where Validity >= 180;