CS-2   UNIT TEST-2

Class XII   **COMPUTER SCIENCE**   **Time: 1 hr**

SET –A

Marks 30

1. Write the definition of a function Reverse(X) in Python, to display the elements in reverse order such that each displayed element is the twice of the original element (element * 2) of the List X in the following manner: [3]

Example: If List X contains 7 integers is as follows

X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]
4	8	7	5	6	2	10

After executing the functions the array should be displayed as follows

20 4 10 12 10 14 16 8

2.   Write a function countmy( )in Python to read the text file "DATA.TXT" and count the number of times "my" occurs in the file. For example if the file "DATA.TXT" contains**:** [2]

"This is my website. I have displayed my preferences in the CHOICE section."

The countmy( ) function should display the output as:

"my occurs 2 times".

3. How is method read() different from readline() in python? [1]

4.. Write a python function generate fact(n) where n is the limit using a generator function fact (n) where max is the limit n that produces factorial using recursion. **[3]**

5. Evaluate the following postfix using stack & show the content of the stack after the Execution of each: 12, 7,3,-, /,2 ,1 , 5, +, * ,+ [1]

6**.** Write a user defined function in Python that displays the number of lines starting with 'H' in the file Para.txt. Eg: if the file contains: [2]

Whose woods these are I think I know.

His house is in the village though;

He will not see me stopping here

To watch his woods fill up with snow.

7. Consider a binary file Employee.dat containing details such as empno :ename :salary (separator ' :'). Write a python function to display details of those employees who are earning between 20000 and 40000.(both values inclusive) [3]

12.Write a python function to search for a value in the given list using binary search method. Function should receive the list and value to be searched as argument and return 1 if the value is found 0 otherwise. [2]

8. What are different types fo complexities that are considered? [1]

14. Each node of a stack contains the following information

(i) Pin Code of a city

(ii) Name of the city

Write a Program to implement following operations in above stack. [3]

9. Convert the following Infix expression to its equivalent Postfix expression, showing the stack contents for each step of conversion :

   a) A+B-D/X   b) (X+Y)/(Z*Y)-R [1]

10. Take two lists say for example these two:

A=[1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

B=[1, 2, 3, 5, 6, 7,8 9,10,11, 12, 13]

and write a program that returns a list that contains only the elements that are common between the list (without duplicates) Make sure your program works on two list of different sizes. Write this in one line of python using at least one list comprehension. Run the complete program and show output. [2]

11. Predict the output. [2]

(i) b=[[9,6][4,5],[7,7]]	(ii) b=[[9,6],[4,5],[7,7]]
X=b[:2]	X=b[:2]
X].append(10)	X[1.].append(10)
print(x)	Print(x)

12 a) What are the input /output restricted queues? [1]

   b) Which data structure will you use for simulating a blanket donations camp?

13. How will your create 2D list ?Give example? [1]

14. Define bisect algorithm with suitable example [2]

1. Write the user defined function named count() that will read the contents of the text file   **[3]** named **"report.txt "** and count the number of lines starting with "I"

Eg: In the following paragraph there are 2 lines starting with "I"

"India is the fastest growing economy.

India is looking for more investments around the globe

The whole world is looking at India as a great market

Most of the Indians can foresee the heights that india is capable of reaching"

2. Observe the following Python code very carefully and rewrite it after removing all syntactical errors with each correction underlined.   [2]

```
DEF execmain():
    x = input("Enter a number:")
    if (abs(x)= x):
        print"You entered a positive number"
    else:
        x=*-1
        print" Number made positive:"x

execmain()
```

3.   Nancy intends to position the file pointer to the beginning of a text file. Write Python statement for the same assuming F is the File object. ?   [1]

4. How is method write() different from write lines() in python?   [1]

5. Write a python function generate fibo(n) where n is the limit using a generator function Fibonacci (max) where max is the limit n that produces Fibonacci series.   [3]

6. Write a program depending upon user's choice either pushes or pops an element in
    A Stack   [2]

7. Define bisect algorithm with suitable example   [2]

8. Evaluate the following postfix using stack & show the content of the stack after the execution of each: 20, 4, +, 3, -, 7, 1 2   [3]

9. What is computational Complexity? How can you estimate complexity of algorithms.[2]

10 .Write a python function to search for a value in the given list using binary search method. Function should receive the list and value to be searched as argument and return 1 if the value is found 0 otherwise.   **[2]**

11. What will be the status of following list after third pass of bubble sort and third pass of selection sort used for arranging elements in ascending order?

40, 67, -23, 11, 27, 38, -1

12. Write a method/function **AEDISP()** in python to read lines from a text file WRITER.TXT, and display those lines, which are starting either with A or starting with E.

For example :

If the content of the file is

A CLEAN ENVIRONMENT IS NECESSARY FOR OUR GOOD HEALTH.

WE SHOULD TAKE CARE OF OUR ENVIRONMENT.

EDUCATIONAL INSTITUTIONS SHOULD TAKE THE LEAD.

The method should display

A CLEAN ENVIRONMENT IS NECESSARY FOR OUR GOOD HEALTH.

EDUCATIONAL INSTITUTIONS SHOULD TAKE THE LEAD

13. Convert the following Infix expression to its equivalent Postfix expression, showing the stack contents for each step of conversion :   [2]

A + B * C ^ D - E

14. What is the worst case complexity of the following code fragment having a nested loop followed by a single loop   [1]

for I in range(n):

    for j in range(n):

        Sequence of statements

for k in range(n):

    Sequence of statements

15. Predict the output   [2]

a)def codo(n):
    if n==0:
        print('finally')
    else:
        print(n)
        codo(n-3)
codo(15**)**
	b) STR = ["90","10","30","40"]
	COUNT = 3
	SUM = 0
	for I in [1,2,5,4]:
	S = STR[COUNT]
	SUM = float (S)+I
	print SUM
	COUNT−=1

16. 12 a) What are the input /output restricted queues?

    a) Which data structure will you use for simulating a blanket donations camp?   [1]