I Term Examination : 2022-23

Class - XII (CBSE)

Time : 3 hrs. **Subject - Computer Science** **M.M. : 70**

General Instructions:-

1. *This question paper contains two parts A and B. Each part is compulsory.*
2. *Both Part A and Part B have choices.*
3. *Part A has two sections:*
   a. *Section -I is short answer questions, to be answered in one word or one line.*
   b. *Section-ll has two case studies questions . Each case study has 4 case based sub parts. An examinee is to attempt any 4 out of the 5 sub parts.*
4. *Part - B is descriptive paper.*
5. *Part-B has three sections*
   a. *Section-I is short answer questions of 2 marks each in which two question have internal options.*
   b. *Section-II is long answer questions of 3 marks each in which two questions have internal options.*
   c. *Section-III is very long answer questions of 5 marks each in which one question has internal option.*
6. *All programming questions are to be answered using Python Language only.*

PART - A

Section - I

Select the most appropriate option out of the options out of the options given for each question. Attempt any 15 questions from question no. 1 to 21.

Q.1- Find the invalid identifier from the following. [1]

a. Mobile b. in c. put d. input

Q.2- Given the list L1 = [10, 20, 30, "red", "green", 3.14,95.9] [1]

Write the output of print(L1[-5 : -l])

Q.3- Identify the valid operator from the following: [1]

a. is b. at c. in d. from

Q.4- Consider the list manipulations given below: [1]

```
L1 = ['W', 'O', 'R', 'I', 'D']
L2 = L1
L1[-1] = 'W'
Ll[l] = '@'
print(Ll)
print(L2)
```

What will be the output after execution of these statements?

a. ['W', 'O', 'R', 'I', 'D']
   ['w', '@', 'R', 'I', 'W']

b. =['w', '@', 'R', 'I', 'W']
   ['w', '@', 'R', 'I', 'W']

Q.5- Determine the output. [1]

```
x = -4
y = -x
print("value of x=", x)
print("value of y=", y)
```


Contd.....2-

Q.6- Determine the output. [1]

```
x = 2
y = 3
z = x ** y + 3
x = y + 5
print("value of Z=", z)
print("valueofX=", x)
```

Q.7- Declare or initialize a dictionary with the capital vowels and its ASCII code as a key/value pair. [1]

Q.8- Identify the incorrect statements from following : [1]

a. "Rama" * 3 b. "Rama" * "3" c. "Rama" + 3 d. "Rama" + "3"

Q.9- Identify the type of object(s) that cannot be used as a key in dictionaries : [1]

a. Tuple b. Lists c. Strings d. Numbers

Q.10- In Python what value/size will be returned on execution of the following statements? [1]

```
X = "World"
Y = list(X)
print(len(X)) #Statement 1
print(len(Y)) #Statement 2
```

Q.11- Consider the following Tuple and predict the output value. [1]

```
A = (11, 22, 33, 44, 55)
A = (A[0 : 2],) + (100,) + (T1[3:],)
print(A)
```

a. ((11, 22), 100, (44, 55)) b. ((11,22), [100], (44,55))

c. ((11, 22), (100), (44, 55))

Q.12- What is the length of tuple given below? [1]

```
T = ((('a', 1), 'b', 'c'), 'd';2), 'e', 3, 'f')
```

Q.13- What is the output produced by following code snippet? [1]

```
Alst = [0, l, 2, 4, 5, 6, 7, 8, 9]
print(Alst[::3])
```

Q.14- Find and write the output of following python code : [1]

```
x = 'abcdef'
while i in x :
print(i, end = " ")
```

Q.15- Trace the flow of execution for following program : [1]

```
def power(b, p):
    r = b ** p
    return r
def calcSquare(a):
    a = power(a,2)
    return a
    n = 5
    result = calcSquare(n)
    print(result)
```

Q.16- Find and write the output of the following python code : [1]

```
a = 10
def call( ):
    global a
    a = 15
    b = 20
    print(a)
call( )
```


Contd.....3-

Q.17- Can a function return multiple values, Yes/No? [1]

Q.18- Write a function header for user defined function Calcinterest which receives PrincipalAmount, Time, RateOfinterest where default value of RateOfinterest is 5.0 % pa. [1]

Q.19- Rewrite the following Python program after removing all the syntactical errors (if any), underline each correction made :

```
def checkval :
x = int(input("Enter a number"))
if x%2 = 0:
    print(x," is Even")
elif:
    print(x,: is Odd")
```

Q.20- Write a function namely Fun that takes no parameter and always returns None. [1]

Q.21- Differentiate between fruitful and non fruitful functions. [1]

SECTION - II

Both the case study based questions are compulsory.

Attempt any 4 sub parts from each question. Each question carries 1 mark.

Q.22- Aman has to write a program to store city name and its population as key value pairs. Each city details input by user is added at the end of list L by calling function addCity( ). All cities details are displayed using function displayAll( ). A function removeCity( ) is to be written which will remove the last city added in list L. Help him write code for above by filling the blanks in following code. [1 × 4]

```
L = [ ]
def addCity( ):
    cn = input("Enter City name")
    cp = input("Enter City Population")
    d = { }
    __1__
    L.append(d)
def displayAll( ):
    for i in L:
        for x in i:
            print("City Name:", __2__,"\tPopulation:", __3__)
def removeCity( ):
    x = __4__
    print("Removed City is", x)
```

a. Fill the blank 1 to store city name and population as key value pair in dictionary object d.

b. Fill the blank 2 to display city name.

c. Fill the blank 3 to display city population.

d. Fill the blank 4 to remove last city details from list.

e. If the statement Lappend(d) is replaced by L.extend(d) then will there be any difference or not. Explain?

Q.23- Which string built in methods are used in following conditions? Illustrate with one example of each. [1 × 4]

a. To exchange the case of characters in a string.

b. To remove leading white spaces in string.

c. To search for a string within another string.

d. To count occurrences of a substring in string.

e. To check the string beginning with particular substring.

Contd.....4-

SECTION - B
SECTION - I

Q.24- Find and write the output of following code : [2]

```
def fun(c):
    k = len(c)
    m = " "
    for i in range(0, k):
        if s[i].isupper( ):
            m = m + s[i].lower( )
        elif s[i].isalpha():
            m = m + s[i].upper( )
        else:
            m = m + 'bb'
    print(m)
fun("school2@COM")
```

Q.25- Considering the list A = [10, 20, 23.5, "Lucknow"] write statements using most appropriate list method to perform the following tasks. [2]

a. Delete 3rd element from list.
b. Add an element "India" in the beginning of the list.
c. Add the elements of list [1, 2, 3] at the end of above given list.
v. To delete element 23.5 from list

Q.26- Consider the code below and answer the questions that follow: [2]

```
def multiply(numl, num2):
    answer = numl + num2
    return(answer)
    print(numl, 'times', num2,'=', answer)
output = multiply(5, 5)
```

a. When the code above is executed, what gets printed?
b. What is variable output equal to after the code is executed?

Q.27- Differentiate between implicit and explicit type conversion. [2]

OR

Differentiate between mutable and immutable data types.

Q.28- Define a function which receives temperature in Fahrenheit and returns equivalent temperature in Celsius. (Hint $C = \frac{S}{9}$ (F - 32) Where C is temperature in Celsius and F is temperature in Fahrenheit) [2]

OR

Define a function which receives principal amount, rate of interest, time and returns Simple Interest using formula S. I. = $\frac{PRT}{100}$

Q.29- What will be the output of the following code snippet? [2]

```
def func(x = l; y = 2):
    x = x + y
    Y+ = l
    print(x, y)
func(y = 2, x = l)
```

Q.30- Differentiate between local variable and global variable. [2]

Contd.....5-

Q.31- Find and write the output of the following python code : [2]

Write output of following code snippet :

```
num = 1
alpha = 'a'
def func( ):
    global num
    num = num + 3
    alpha = 'b'
    print(num)
func( )
print(num)
print(alpha)
```

Q.33- Write output of following code : [2]

```
def addVal(p):
    P+ = 1
L = [1, 2, 3, 4]
addVal(L)
print(L)
print(len(L))
```

SECTION-II

Q.34- Explain the different types of parameters in Functions? Give examples also. [3]

Q.35- Write output of following : [3]

```
def test(a, b = 5, c = 10):
    print("a is ", a, "b is", b, "c is", c)
test(3, 7)
test(25, c = 24)
test(c = 50, a = 100)
```

Q.36- Explain with example mutability/immutability of parameters in function calls. [3]

Q.37- Write output of following code snippets : [3]

a.
```
for l in [1, 2, 3, 4, 5]:
    print(i)
```

b.
```
for x in range(-500, 500, 100):
    print(x, end = "*")
```

c.
```
s = "Tom and Jerry"
print(s.partition("and"))
```

SECTION-III

Q.38- Write a program to input a list of strings find and print the longest and largest string. [5]

Q.39- Write a program that generates a series using a user defined function which takes first and last values of the series and then generates four terms that are equidistant e.g., if two numbers passed are 1 and 7 then function returns 13 5 7. [5]

Q.40- Write a menu driven program using user defined functions with following choices : [5]

1- To Check a number is prime number or not
2- To Check a number is perfect number or not
3- To Check a number is Armstrong number or not
4- Quit from program

(Hint Prime number is a number which is divisible by itself and 1 only e.g. 2, 3, 5, Perfect number is number whose sum of divisors is equal to that number itself e.g. 6 sum of divisors 1 + 2 + 3 = 6, Armstrong number is a number whose sum of cube of digits is equal to the number itself e.g. 153 = 13 + 53 + 33)

Contd.....6-

OR

Write a menu driven program to manage items sold in a grocery shop. The item details includes ltemId, ItemName, QuantityOnHand, PricePerUnit, Unit. Make use of user defined functions and List. The available choices are :

1- To add an Item
2- To search an Item
3- To display all Items
4- Quit from program

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