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Roll No. : | | | |

I PRE-BOARD EXAMINATION 2019-20

SUBJECT : COMPUTER SCIENCE

CLASS : XII

Time : 3 hours **Marks :70**

General Instructions:

(a) All questions are compulsory,

(b) Question paper is divided into 4 sections A, B, C & D.

(c) Give examples where required.

Section-A- Unit 1 ***Section-B- Unit 2***

Section-C- Unit 3 ***Section-D- Unit 4***

SECTION A

Q1. (a) Which of the following is/are**not** a valid operator in python: 1

(i) += (ii) import

(iii) None (iv) or

(b) Write the type of tokens of the following: 1

(i) _Var (ii) in

(c) Write the name(s) of the modules which are required to use these built-in functions:- 1

(a) randrange() (b) abs()

(d) Rewrite the following program after removing the syntactical errors (if any). 2

Underline each correction.

```
X=10
For I in range(0, X):
```

```
        if I<=5:
            Print(I%10)
    else
    print(I/10)
```

(e) Write the output of the following python program code(assume all necessary modules are included in program): 2

```
def Show(STR, KEY):
    X=0
    L=len(STR)
    while X < (L//2):
      if X%2 is not 1:
            print( STR[X] * KEY )
      else:
            print( STR[X] * (KEY+1) )
      X += 1
      KEY += 2
Show("PYTHON",1)  #Calling function Show()
```

(f) Write the output of the following python program code(assume all necessary modules are included in program): 3

```
Old_Msg="PasS@2019"
New_Msg=""
for M in Old_Msg:
    if M.isupper():
      New_Msg += M.lower()
    elif M.islower():
      New_Msg += M.upper()
    elif M.isdigit():
      New_Msg += "*"
    else:
      New_Msg += "#"
print("New message is :", New_Msg)
```

(g) Consider the following PYTHON program code and choose the option(s) which are possible as output. Also, print the **minimum** & **maximum** value of variable **Temp** during complete execution of the program.(assume all necessary modules are included in program): 2

```
import random
Series=[0,2,4,6]
for Count in range(0,4):
    Temp = random.randint(Series[Count], Count*3)
    print(Temp,":",end=" ")
```

(a) 0: 0: 4: 6:

(b) 0: 2: 5: 7:

(c) 0: 3: 7: 8:

(d) 0: 4: 6: 9:

Q2. (a) What is the use of "continue" keyword in python? 1

(b) Write the statement in python to declare the dictionary named GRADE with the following specification: 1

Key	Value
A	Outstanding
B	Excellent
C	Very Good
D	Good

(c) Identify the type of argument **M**, in the given below python code from the following options: 1

```
def Greater(A, M=0):
if A>M:
    return A
elif A<M:
    return M
```

(a) Sequential argument (b) Keyword argument

(c) Default argument (d) None of the above.

(d) Identify the data type of X in the given below statement from the following options: 1

X = (20, 3.14, "OK", 100)

(a) List (b) Dictionary

(c) Array (d) Tuple

(e) Write the output of the following python code: 1

```
def CALLER(A, B=100):
    A = A+B
    B = B%A
    return B
print(CALLER(70))
```

(f) Write any two ways/statements through which a method/function of a module may be imported in a python program. Give an example for each. 2

(g) Write a python program to draw a bar chart for the year-wise growth of MNC Pvt. Ltd. Company whose details are given below: 2

→ Year : [2001,2002,2003,2004,2005]

→ Growth% : [50,20,40,55,60]

→ Title: GROWTH OF MNC PVT LTD

OR

Give the output of the following Python code:

```
import matplotlib.pyplot as plt
x1= [10,15,25,30]
y1= [5,10,12,6]
plt.bar(x1, y1)
plt.xlabel("X-AXIS")
plt.ylabel("Y-AXIS")
plt.title("BAR CHART SAMPLE")
plt.show()
```

(h) Write a user-defined function named **Count_the()** in python that

will read the contents of text file named **"Report.txt"** and count the number of times "the" or "The" words that exists in it. 2

E.g. In the following paragraph, word "the" comes 2 times.

ISRO is expanding in the Aerospace. Chandrayan-2 is India's latest achievement for the same. World is looking at India for tomorrow's technology in space.

OR

Write a function in python named **Count_R()** to count the number of lines in text file '**Report.txt**' which starts with alphabet '**R**'.

(i) Write the definition of a **recursive** function **Recur_SumSeries(N)** that will accept number of terms N as argument and the function will return the sum of squares of natural numbers upto **N** number.3

E.g. if function call is **Recur_SumSeries(4),**

then output will be $\mathbf{1 + 2^2 + 3^2 + 4^2 = 30}$

OR

Write definition of a **recursive** function named **Recur_Power (X,N)** in python to calculate and return the power of X upto number N passed as arguments.

E.g. if function call is **Recur_Power(4,3),**

then output will be $\mathbf{4^3=64}$

(j) Write the definition of the **PUSHNAME()** & **POPNAME()** methods in Python to add a name and remove a name respectively from a given stack of names of countries. 4

OR

Write a function in Python QINSERT(Appl, No) and QDELETE(Appl) for performing insertion and deletion operations in a Queue of Applications. **Appl** is the list used for implementing queue and **No** is the value of a new application to be inserted in the queue.

SECTION B

Q3. (a) _____ is a network device used to divide a single

computer network into various sub-networks. 1

(b) _____ is a data security technique in which the original form of a message changed into a form which is not meaningful in nature. 1

(c) _____ is the process of accessing a network from a remote place without being at the actual place of working. 1

(d) _____ is a Command Prompt command which is used to test the ability of the source computer to reach a specified destination computer. 1

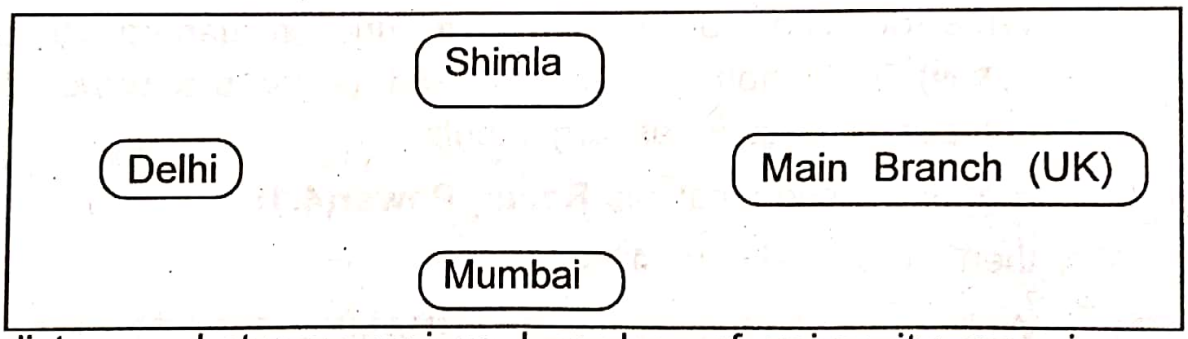
(e) What is Routing Table in Computer Network? 2

(f) Expand the following:- 2

1. ICMP
2. Mbps
3. HTTPS
4. SCP

(g) Define & explain all parts of a URL of a website. 3

(h) PATIT University of Uttrakhand wants to set-up three new branches at Delhi, Mumbai & Shimla and getting them networked. 4



The distances between various branches of university are given as:-

(h)

Branch1	Branch2	Distance(in kms)
Main Branch(UK)	Delhi	550
Main Branch(UK)	Mumbai	2000
Main Branch(UK)	Shimla	2500
Delhi	Mumbai	1400
Mumbai	Shimla	4500
Delhi	Shimla	3500

The number of computers in various branches of the university

are as:-

Branch	No. of Computers
Main Branch(UK)	150
Delhi	75
Mumbai	50
Shimla	60

As a network expert, you are required to give best possible solutions for the given queries of the university administration:- 4

(a) Suggest cable layout for the connections between the branches,

(b) Suggest the most suitable branch to house the server of the network of the university,

(c) Suggest the placement of Switch/Hub or Repeater in all branches of the university,

(d) Suggest the technology for setting Internet connectivity among branches of the university.

SECTION C

Q4. (a) Which keyword in SQL is used to find unique values from various duplicate values in a column. 1

(b) ___ command in SQL is used to change/modify data of a table.1

(c) _____ command in SQL is used to save the transactions made by any of the DML commands. 1

(d) Write the use of giving NOT NULL keyword for a column while creating a table in SQL. 1

(e) Differentiate between WHERE and HAVING clause. 2

OR

Differentiate between DROP and DELETE command in SQL.

(f) Differentiate between Django GET(() & POST() methods. 2

(g) Write the output for the SQL queries (i) to (iii) which are based on the table **PLAN** given below: 3

		PLAN		
ID	NAME	DATA	SPEED	RENTAL
I001	Airtel	150	24	800
I002	BSNL	200	12	700
I003	Idea	160	12	750
I004	Tenda	250	16	850
I005	Vodafone	NULL	12	800
I006	Tata	150	24	750

(i) SELECT name, data, rental FROM plan WHERE rental>750;

(ii) SELECT id, name FROM plan WHERE name LIKE '%a' AND speed BETWEEN 10 TO 20;

(iii) SELECT COUNT(DISTINCT speed) FROM plan;

(h) Write SQL queries for (i) to (iv) which are based on the table **PLAN** given above in question 4(g):

(i) To display the name and speed of all PLANs in ascending order of their rental.

(ii) To count & display the number of PLANs speed-wise.

(iii) To display the maximum & minimum data of the PLANs having rental more than 800.

(iv) To display a list of PLANs where data is not given. 4

SECTION D

Q5. (a) _____ is the fraudulent attempt to obtain sensitive information like usernames, passwords, credit/debit cards details, etc. 1

(b) A person is using the social account of twitter of another person without his/her information & consent. What this is called and what will be your action when you know about this? 1

(c) Explain briefly any two measures to recycle e-waste safely. 2

(d) What do you mean by software licensing? Give a real time example of it. 2

(e) Explain any two disability issues that may arise while teaching using ICT tools. 2

(f) List any two ways to verify the authentication of a person. 2