

1st PRE BOARD EXAMINATION (2019-20)

Class : XII

Sub : **COMPUTER SCIENCE (083)**

Time allowed : 3 hours

Maximum Marks : 70

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.

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 valid logical operator in Python:

- (i) // (ii) ? (iii) < (iv) and

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

- (i) for (ii) Age

(c) Name the Python Library modules which need to be imported to invoke the following functions:

- (i) cos() (ii) randint ()

(d) Rewrite the following code in python after removing all syntax error(s).

Underline each correction done in the code.

~~30=Max~~

~~for N in range (0,Max)~~

~~IF n%3==0:~~

print (N*3)

~~Else:~~

print (N+3)

(e) Find and write the output of the following python code:

def fun(s):

x = len(s)

m = ""

```

for i in range(0,x):
    if s[i].islower():
        m += s[i].upper()
    elif s[i].isalpha():
        m += s[i].lower()
    else:
        m += 'bb'
print(m)
fun('exam2@com')

```

EXAM bbb COM

(f) Find and write the output of the following python code:

```

def Change(P,Q=20):
    P=P+Q
    Q=P-Q
    print(P,"#",Q)
    return (P)
R=150
S=100
R=Change(R,S)
print(R,"#",S)
S=Change(S)

```

(g) What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum and minimum values that can be assigned to the variable PICK.

```

import random
PICK = random.randint(0,3)
CITY = ["DELHI", "MUMBAI", "CHENNAI", "KOLKATA"]
for I in CITY:
    for J in range(1, PICK):
        print(I, end=" ")
print()

```

(i) DELHI DELHI
MUMBAI MUMBAI
CHENNAI CHENNAI
KOLKATA KOLKATA

(ii) DELHI
DELHI MUMBAI
DELHI MUMBAI CHENNAI

(iii) DELHI
MUMBAI
CHENNAI
KOLKATA

(iv) DELHI
MUMBAI MUMBAI
KOLKATA KOLKATA KOLKATA

Q2 (a) What do you understand by the term Iteration?

(b) Which is the correct form of declaration of dictionary?

- (i) Month = (1:'january', 2:'february', 3:'march')
- (ii) Month = [1:'january', 2:'february', 3:'march']
- (iii) Month = {1:'january', 2:'february', 3:'march'}
- (iv) Month = {1'january', 2'february', 3'march'}

(c) Identify the valid declaration of L:

L = [32, 'computer', 'hi', 19].

- (i) array
- (ii) dictionary
- (iii) tuple
- (iv) list

(d) Find and write the output of the following python code:

```
x = "mnopxyz"  
i = "m"  
while i in x:  
    print(i, end = " ")
```

infinite or ~~infinite~~ m n o p x y z

(e) Find and write the output of the following python code:

```
k = 10  
def change():  
    global k  
    k = 25  
    print(k)  
change()
```

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- (f) What do you understand by local and global scope of variables? How can you access a global variable inside the function, if function has a variable with same name. 2
- (g) A bar chart is drawn (using pyplot) to represent month wise average rainfall. Write appropriate statements in Python to provide labels "Months" and "Avg. Rainfall" to x and y axis respectively. 2

OR

Give the output from the given python code:

```
import matplotlib.pyplot as plt; plt.rcdefaults()
```

```
import numpy as np
```

```
import matplotlib.pyplot as plt
```

```
objects = ('Python', 'C++', 'Java', 'Perl', 'Scala', 'Lisp')
```

```
y_pos = np.arange(len(objects))
```

```
performance = [10,8,6,4,2,1]
```

```
plt.bar(y_pos, performance, align='center', alpha=0.5)
```

```
plt.xticks(y_pos, objects)
```

```
plt.ylabel('Usage')
```

```
plt.title('Programming language usage')
```

```
plt.show()
```

- (h) Write a function in python to count the number of lines in a text file 'GRAMMAR.TXT' which is starting with an alphabet 'K'. 2

OR

Write a method/function DISP_5_WORDS() in python to read lines from a text file SAMPLE.TXT, and display those words, which are less than 5 characters long.

- (i) Write a Recursive function in python BinarySearch(MyList,L,R,X) to search the given element X to be searched from the List MyList having R elements, where L represents lower bound and R represents the upper bound. 3

OR

Write a program in Python using a Recursive function fibo(n) to print Fibonacci series up to n – th term.

- (j) Write a function in Python, INSERTQ(Arr,data) and DELETEQ(Arr) for performing insertion and deletion operations in a Queue. Arr is the list used for implementing queue and data is the value to be inserted. 4

OR

Write a function in python, MakePush(Data) and MakePop(Data) to add a new Data and delete a Data

from a List of Data, considering them to act as push and pop operations of the Stack data structure.

SECTION B

Q3 Questions 3 (a) to 3 (c) : Fill in the blanks

- (a) A Gateway is a device that connects dissimilar networks. 1
- (b) A Server is a computer on the network, dedicated to processing client requests. 1
- (c) Router is a device that forwards data packets along networks. 1
- (d) Bandwidth describes the maximum transmission capacity of a communication channel. 1
- (e) Give the full forms of the following
- (i) POP (ii) SCP 2
- (iii) VoIP (iv) HTTP
- (f) What is the significance of protocols in networks? 2
- (g) Identify the type of cyber crime for the following situations:
- (i) Rahul complains that Rs. 2.5 lacs have been fraudulently stolen from his account online via some online transactions in two days using NET BANKING. Bank Theft/fraud
- (ii) Sujal complains that his debit card is safe with him still some body has done ATM transaction on this card. Identity Theft
- (iii) Kritika complains that somebody has created a fake profile on Twitter and defaming her character with abusive posts and pictures. Cyber stalking 3
- (h) Ayurveda Training Educational Institute is setting up its center in Hyderabad with four specialized departments for Orthopedics, Neurology and Pediatrics along with an administrative office in separate buildings. The physical distances between these department buildings and the number of computers to be installed in these departments and administrative office are given as follows. 4
- You, as a network expert, have to answer the queries as raised by them in (i) to (iv).

Number of Computers

Pediatrics Unit	40
Administrative Office	140
Neurology	50
Orthopedics Unit	80

Shortest distances between various Blocks in meters:

Administrative Office to Orthopedics Unit	55 m
Neurology Unit to Administrative Office	30 m
Orthopedics Unit to Neurology Unit	70 m
Pediatrics Unit to Neurology Unit	50 m
Pediatrics Unit to Administrative Office	40 m
Pediatrics Unit to Orthopedics Unit	110 m

- (i) Suggest the most suitable location to install the main server of this institution to get efficient connectivity with a suitable reason.
- (ii) Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.
- (iii) Suggest the topology of the network and network cable for efficiently connecting each computer installed in each of the buildings out of the following :

Topologies : Bus Topology, Star Topology

Network Cable : Single Pair Telephone Cable, Coaxial Cable, Ethernet Cable.

- (iv) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following :

- Gateway
- Modem
- Switch.

SECTION C

- Q4 (a) What is the default sort order of ORDER BY clause? 1
- (b) Which clause is used to combine all the records of a table that have identical values in a particular field? 1
- (c) Which command is used to modify the records of the table? 1
- (d) Which clause is used to consider all values including duplicate values of the table? 1
- (e) Differentiate between Primary key and Candidate key. 2

OR

Differentiate between Degree and Cardinality.

- (f) Differentiate between Django GET and POST method. 2
- (g) Write a output for SQL queries (i) to (iii), which are based on the table: CLUB given below: 3

COACH ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY	SEX
1	KUKREJA	35	KARATE	1996-03-27	1000	M
2	RAVINA	34	KARATE	1998-01-20	1200	F
3	KARAN	34	SQUASH	1998-02-19	2000	M
4	TARUN	33	BASKETBALL	1998-01-01	1500	M
5	ZUBIN	36	SWIMMING	1998-01-12	750	M
6	KETAKI	36	SWIMMING	1998-02-24	800	F
7	ANKITA	39	SQUASH	1998-02-20	2200	F
8	ZAREEN	37	KARATE	1998-02-22	1100	F
9	KUSH	41	SWIMMING	1998-01-13	900	M
10	SHAILYA	37	BASKETBALL	1998-02-19	1700	M

- (i) SELECT SPORTS, COUNT(*) FROM CLUB GROUP BY SPORTS;
- (ii) SELECT AVG(PAY) FROM CLUB WHERE SPORTS = "SQUASH";
- (iii) SELECT COACHNAME, SEX FROM CLUB WHERE SPORTS = "SWIMMING";
- (h) Write SQL queries for (i) to (iv), which are based on the table: CLUB given in the question 4(g):
- To display the records from table CLUB in alphabetical order as per the name of the Coach.
 - To display COACHNAME, DATEOFAPP and SPORTS whose PAY is between 1000 and 2000.
 - To display SPORTS and total number of coaches who have PAY more than 1500, SPORT wise
 - To increase PAY of all coaches by 100 whose SPORTS is "SWIMMING"

SECTION D

- Q5 (a) What is Online Fraud? 1
- (b) As a citizen of India, What advise you should give to others for e-waste disposal? 1
- (c) Write any two ways to avoid identity theft. 2
- (d) From : Internal Revenue Service [mailto:admin@irs.gov]

Sent : Wednesday, March 01, 2006 12:45 PM

To : john.doe@jdoe.com

Subject : IRS Notification – Please Read This

After the last annual calculations of your fiscal activity we have determined that you are eligible for a tax refund of \$ 63.80.

Please submit the tax refund request and allow us 6 – 9 days in order to process it.

A refund can be delayed for a variety of reasons. For example submitting invalid records or applying after the deadline.

To access the form for your tax refund, please click here

John received a mail form IRS department (as shown above). On clicking " Click-Here" , he was taken to a site designed to imitate an official-looking website, such as IRS.gov. He uploaded some important information on it.

Identify and explain the cyber crime being discussed in the above scenario.

- (e) Differentiate between Shareware and Open Source Software.
- (f) Enumerate any two disability issues while teaching and using computers.

□□□

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