Pre Board1 Examination, 2019-20
Computer Science (083)-New
Class – XII

Max. Marks: 70

Date:16 January, 2020   Time Allowed: 3 hours

General Instructions:

1. All questions are compulsory.
2. 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/are not valid identifier('s) in Python: (i) finally (ii) false (iii) my_sql (iv) is	[1]
	(b)	Write the type of tokens from the following: (i) my_sql (ii) else	[1]
	(c)	Name the Python Library modules which need to be imported to invoke the following functions: (i) ceil() (ii) seed() (iii) match() (iv) pyplot()	[1]
	(d)	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.	[2]
	(e)	Find and write the output of the following python code:	[2]

(d)
```
STRING=""WELCOME
for S in range[0, len(STRING)]:
    print (STRING(S))
print (S+STRING)
```

(e)
```
def makenew(mystr):
    newstr = " "
    count = 0
    for i in mystr:
        if count%2!=0:
```

```
                    newstr = newstr+str(count)
                else:
                    if i.islower():
                        newstr = newstr+i.upper()
                    else:
                        newstr = newstr+i
            count +=1
        newstr = newstr+mystr[:3]
        print("The new string is :",newstr)
makenew("Topper 2020")
```

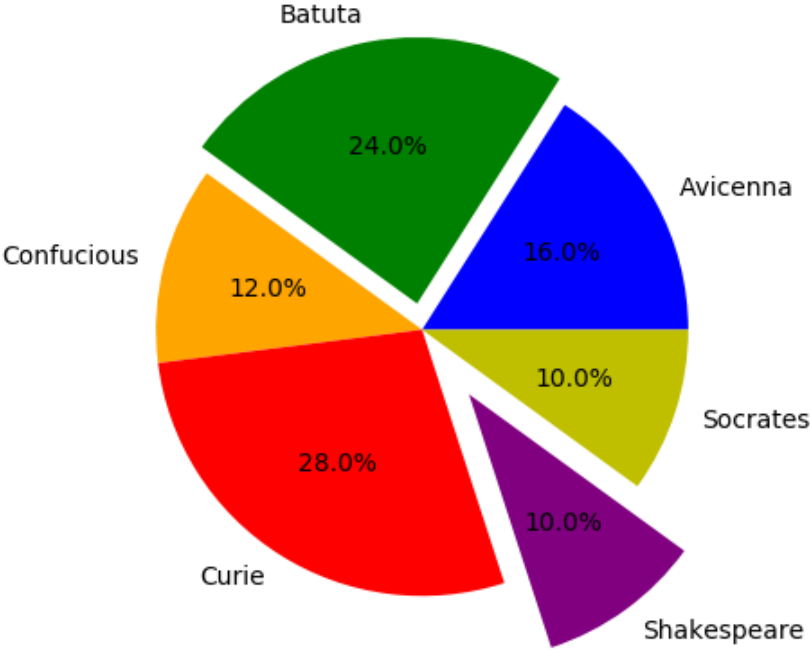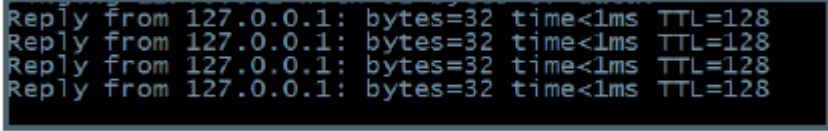|	(f)	Find and write the output of the following python code:
		
		``
		def Modify(P ,Q=10):
		    P=P+Q
		    Q=P-Q
		    print(P,"#",Q)
		    return (P)
		R=-100
		S=150
		R=Modify(R,S)
		print(R,"#",S)
		S=Modify(S)
		``
			[3]

	(g)	What possible outputs(s) are not expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum value and minimum value that can be assigned to Number.
		
		``
		import random
		Low=25
		def main():
		    point=5
		    for i in range(1,5):
		        Number=Low+random.randint(0,point)
		        print (Number,end=" ")
		        point-=1
		main()
		``
		
		``
		(i) 25 30 26 25
		(ii) 30 28 26 26
		(iii) 30 29 28 27
		(iv) 25 29 28 28
		``
			[2]

Q2.	(a)	What is indexing in context of Python strings? Why is it also called two way indexing?	[1]

	(b)
	(i)
		Which of the following is/are correct declaration of functions:
		
		``
		def squaresum():
		    sm = 0
		    for i in range(1, 11):
		        sm = sm + (i)
		    print (sm)
		squaresum()
		``
			[1]

(ii)
```
def squaresum():
    sm = 0
    for i in range(1, 11):
        sm = sm + [i]
    return sm
print(squaresum())
```

(iii)
```
def squaresum():
    sm = 0
    for i in range(1, 11):
        sm = sm + (i)
    print (sm)
squaresum[]
```

(iv)
```
def squaresum():
    sm = 0
    for i in range(1, 11):
        sm = sm + (i)
    return sm
print(squaresum())
```

(c)	Identify the valid declaration of N: N={1:'Jan', 2:'Feb', 3:'Mar'} (i) list (ii) dictionary (iii) array (iv) tuple	[1]

(d)	Find and write the output of the following python code:
	`Nums = [9,18,27,36]`
	`for val in Nums:`
	`    for N in range(1,val%8):`
	`        print(N, '$', end = ' ')`
	`    print( )`
		[1]

(e)	`a=10`
	`y=15`
	`def f():`
	`    global a`
	`    y=a`
	`    a=2`
	`    print("a+y=",a+y)`
	`    return a+y`
	`print("y=",y,"a=",a)`
	`print(f())`
	`print("y=",y,"a=",a)`
		[2]

(f)	What do you understand by function? List the types of functions in python.	[1]

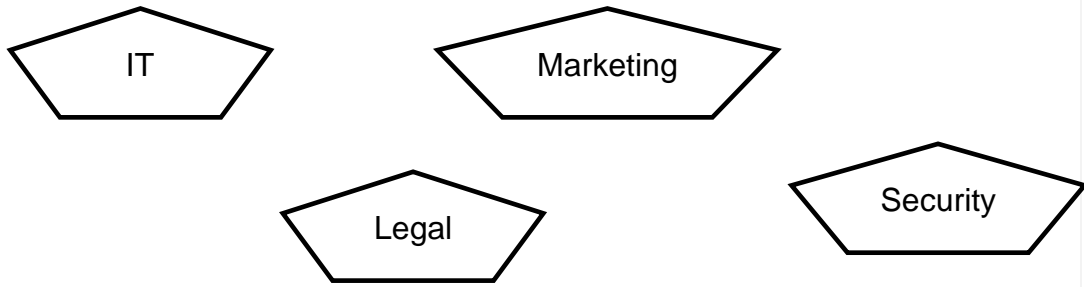|			
	(g)	A bar chart is drawn(using pyplot) to represent volunteering information data of various cities of India for a month. Write appropriate statements in Python to provide labels **City** and **Collection** to x and, y axis respectively. Title of the Graph as **Volunteer Data.**	[2]
		OR	
		Write a python code to draw the following pie chart: 	
	(h)	Write a function in python to count the number of occurrences of the particular word 'He' or 'She' (any case) in a text file 'HeSheWordsCount.txt'. Ensure that the 'He' and 'She' words are counted as independent words and not part of any other word.	[2]
		OR Write a program to count number of lines starting with 'S' in a file StartWithS.txt and print them.	
	(i)	Write a Recursive function in python **BinarySearch(Arr,l,R,X)** to search for the given element **X** in the List **Arr** having **R** elements where **l** represents lower bound and **R** represents upper bound.	[3]
		OR Write a Recursive function in Python for **Fib()** that takes **N** as a parameter and returns the Nth Fibonacci number where **N** is an integer. Take the first term as 0.	
	(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(Package)** and **MakePop(Package)** to add a new Package and delete a Package from a List of Package Description, 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)	_____ and _____ are examples of Public cloud.	[1]
	(b)	_____ is a network diagnostic tool that displays the route taken by packets across a network and measures any transit delays.	[1]
	(c)	_____ is a unit to measure the data transmission speed.	[1]
	(d)	Look at the image given below and answer questions that follow : (i) Name the command which gives such type of result. (ii) Why is this command used?	[2]

	(e)	Give the full forms of the following:
		    (i) TCP/IP
		    (ii) POP3
		    (iii) IRC
		    (iv) SCP
			[2]

	(f)	How many directions data is transmitted in Full Duplex(FDX)? What is the process on converting electronic data to an unrecognizable form called?	[1]

	(g)	Identify the type of cyber crime:
		    (i) Posing as someone else and using his/her personal/financial information for shopping online.
		    (ii) Stealing someone else's intellectual work and representing it as your own work without citing the source of information.
		    (iii) The practice of attempting to acquire sensitive information from individuals over the internet by means of deception.
			[3]

| (h) | Network Securities Pvt. Ltd. is setting up the network in the Baroda. There are four departments named as IT, Marketing, Legal and Security. | [4] |

```
      IT              Marketing

           Legal              Security
```

Distance between various buildings is as given:

IT to Marketing	80m
IT to Legal	180m
IT to Security	100m
Legal to Security	150m
Legal to Marketing	100
Marketing to Security	50m

Number of Computers in the buildings:

IT	20
Legal	10
Marketing	08
Security	42

(i) Suggest the most suitable building to place the server with a suitable reason.
(ii) Suggest the type of network to connect all the departments with a suitable reason.
(iii) The company is planning to link all the departments through secure and high speed transmission. Suggest a way to connect the buildings.
(iv) The organization is planning to link its sales counter situated in various parts of different countries. Which type of network out of LAN, WAN, MAN will be formed? Justify.

SECTION-C

Q4	(a)	Command used to implement structure modification.	[1]
	(b)	Clause used to group by one or more columns	[1]
	(c)	Clause used to restrict the groups of returned rows	[1]
	(d)	Command to find Number of records in the table.	[1]
	(e)	Differentiate between DDL & DMLcommands. Identify DDL & DML commands from the following:- (UPDATE, SELECT, ALTER, DROP)	[2]

OR

Observe the table 'Club' given below:

Club

Member_id	Member_Name	Address	Age	Fee
M001	Sumit	New Delhi	20	2000
M002	Nisha	Gurgaon	19	3500
M003	Niharika	New Delhi	21	2100
M004	Sachin	Faridabad	18	3500

(i)   What is the cardinality and degree of the above given table?

(ii) If a new column contact_no has been added and three more members have joined the club then how these changes will affect the degree and cardinality of the above given table.

(f)	Differentiate between fetchall() and fetchmany().	[2]
(g)	Write a output for SQL queries (i) to (iii), which are based on the table: **STUDENT** given below: Table : **STUDENT**	[3]

RollNo	Name	Class	DOB	Gender	City	Marks
1	Nanda	X	06-06-1995	M	Agra	551
2	Saurabh	XII	07-05-1993	M	Mumbai	462
3	Sanal	XI	06-05-1994	F	Delhi	400
4	Trisla	XII	08-08-1995	F	Mumbai	450
5	Store	XII	08-10-1995	M	Delhi	369
6	Marisla	XI	12-12-1994	F	Dubai	250
7	Neha	X	08-12-1995	F	Moscow	377
8	Nishant	X	12-06-1995	M	Moscow	489

(i)   SELECT COUNT(*), Class FROM STUDENT GROUP BY Class HAVING COUNT(*)>2;

(ii) SELECT AVG(MARKS) FROM STUDENT WHERE MARKS>=400;

(iii) SELECT NAME, MARKS FROM STUDENT
      WHERE CITY LIKE "%M%";

(h)	Write SQL queries for (i) to (iv), which are based on the table: **STUDENT** given in the question 4(g):	[4]

(i)   To display the records from table student in descending order as per the name of the student.

(ii) To display Class, Dob and City whose marks are not between 450 and 551.

(iii) Display average marks, class and total number of students class wise.

(iv) To increase the marks of all students by 5 who are from 'Moscow'.

SECTION-D

Q5	(a)	An application that damages online and offline computers through trojans, viruses and spyware is called _____.	[1]
	(b)	What do you mean by Identity theft? List any two tips to avoid identity theft?	[2]
	(c)	Privacy is the protection of personal information given online. In e-commerce especially, it is related to a company's policies on the use of user data. (i) Why is the above given statement important? (ii) What is the need to safeguard user privacy?	[2]
	(d)	Define the term Internet fraud. Name any two types of Internet frauds.	[2]
	(e)	Differentiate between Free software and Open Source software.	[2]
	(f)	Enumerate any two disability issues while teaching and using computers.	[1]
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