

**(2019-20)**  
**Pre Board -I**  
**[SET – A]**

Name :  
Class: XII

Subject : Computer Science (083)  
Date : 16.12.19

Time : 3 Hour.

M.M: 70

**General Instructions:**

- Please check that this question paper contains 5 questions.
- Read the question paper carefully and attempt all the questions.
- Do not write anything on the Question paper.
- Leave one-line space after completing every question.
- Revise and check your answers before submitting the answer sheet.
- Please write down the Serial Number of the question before attempting it.

1. (i) Write names of two mutable data types and two immutable data types available in python. (1)
- (ii) Name the python library module which need to be imported to run the following program: print (sqrt(random.randint(1,16)) (1)
- (iii) Rewrite the following code in python after removing all syntax error(s). Underlining each correction done in the code. (1)

```
30=x
For I in range(2,6)
if x>30:
    print("true")
else
    Print("False")
```

- (iv) Find and write the output of the following python code: (2)

```
Msg="CompuTer"
Msg1=""
for i in range(0,
len(Msg)):
    if Msg[i].isupper():
        Msg1=Msg1+Msg[i].lower()
    elif i%2==0:
        Msg1=Msg1+'*'
    else:
        Msg1=Msg1+Msg[i].upper() print(Msg1)
```

- (v) Find and write the output of the following python code: (2)
- ```

def Alter(x,y=20):
    x=x*y
    y=x%y
    print (x,'*',y)
    return (x)
a=200
b=30
a=Alter(a,b)
print (a,'$',b)
b=Alter(b)
print (a,'$', b)
a=Alter(a)
print (a,'$',b)

```

- (vi) What possible outputs are expected to be displayed on the screen at the time of execution of the program from the following code? Also specify the minimum and maximum values that can be assigned to the variable c. (3)

```

import random
temp=[10,20,30,40,50,60]
c=random.randint(0,4)
for I in range(0, c):
    print(temp[i],”#”)

```

- |              |                    |
|--------------|--------------------|
| a) 10#20#    | c) 10#20#30#40#50# |
| b) 10#20#30# | d) 50#60#          |

- (vii) Write a recursive function to calculate the Fibonacci Series up to n terms. (2)
2. (i) Write any four methods used with pyplot . (1)
- (ii) Write any one difference between readline( ) and readlines( ) (1)
- (iii) Name the function that you will use to create a line chart and Pie Chart. (1)
- (iv) Write the name of any four types of plots offered by matplotlib? (1)
- (v) Write a statement in python to open a text file REWRITE.TXT so that new content can be read or written from it. (1)
- (vi) A bar chart is drawn (using pyplot) to represent sales data of various models of cars, for a month. Write appropriate statements in Python to provide labels Month - June and Sale done to x and y axis respectively. (2)
- (vii) A text file “Quotes.Txt” has the following data written in it: Living a life you can be proud of Doing your best Spending your time with people and activities (2)

that are important to you Standing up for things that are right even when it's hard Becoming the best version of you Write a user defined function to display the total number of words present in the file.

**OR**

Write a user defined function in Python that displays number of lines starting with 'H' present in the text file Poem.txt.

- (viii) 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. (2)

**OR**

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.

- (ix) Write a program using Pyplot to get Total profit of all months and show line plot with the following Style properties (3)

Line Style dotted and Line-color should be red

Show legend at the lower right location.

X label name = Month Number

Y label name = Sold units number

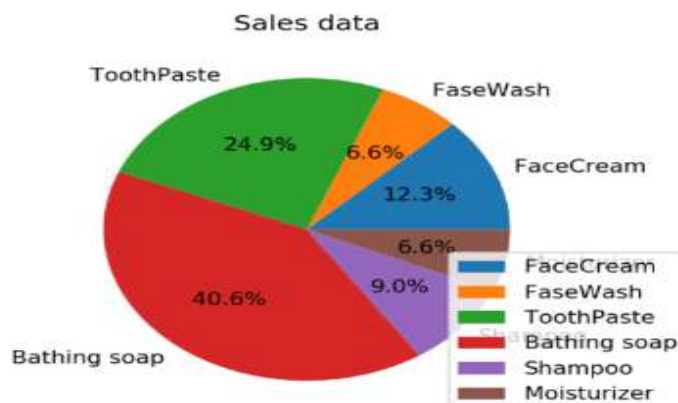
Add a circle marker.

Line marker color as read

Line width should be 3

**OR**

Write a program using Pyplot to calculate total sale data for last year for each product and show it using a Pie chart:



- (x) Write a program to implement a stack for these book details (book no, book name). That is, now each item node of the stack contains two types of (4)

information – a book no and its name. Implement PUSH and display operations.

**OR**

Consider the details of books where they entered in a queue. Book details like book id and book name are added to the Queue. Write a program to perform the basic operations of a Queue using list, where the basic operations include inserting, deleting and showing the Queue elements.

3. (i) Write the expanded name for the following abbreviated terms used in Networking and Communication: (1)
- a) SSH b) IMAP
- (ii) What are the enabling technologies of IoT system. (1)
- (iii) What is network congestion? What are its symptoms? (1)
- (iv) What is CSMA/CA? How does it works. (1)
- (v) Write any two pros and cons of Cloud Computing. (2)
- (vi) What are the different types of networking/ internetworking devices? (2)
- (vii) Write about the commonly used protocols across the internet. (3)
- (viii) Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below: (4)



Distance between various building are as follows:

|                                |      |
|--------------------------------|------|
| Accounts to research Lab       | 55m  |
| Accounts to store              | 150m |
| Store to packaging unit        | 160m |
| Packaging unit to research lab | 60m  |
| Accounts to packaging unit     | 125m |
| Store to research lab          | 180m |

## Number of Computers

|                |     |
|----------------|-----|
| Accounts       | 25  |
| Research Lab   | 100 |
| Store          | 15  |
| Packaging Unit | 60  |

As a network expert, provide the best possible answer for the following queries:

- a) Suggest a cable layout of connections between the buildings.
- b) Suggest the most suitable place (i.e. buildings) to house the server of this organization.
- c) Suggest the placement of the following device with justification: a) Repeater b) Hub/Switch
- d) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

4. (i) What is Django templates? (1)
- (ii) Name the file data found in project web application folder. (1)
- (iii) Identify the view functions from the following URL confs and write their function header. (1)
- a) `path('home/',views.main)`    b) `path('home/check/',views.newone)`
- (iv) What is database connectivity? Which package must be imported in python to create a database connectivity application? (1)
- (v) Explain how you can write a view in Django? (2)
- (vi) Write a program using MYSQL- Python to update employee record where new value of age is 60 where employee name must be start with A. (2)

**OR**

Write a program using MYSQL- Python to insert a record in table doctor where column are DID, Dname and Area.

- (vii) Define the following in terms of MYSQL: (3)
- a) Aggregate Functions
  - b) Order by Clause
  - c) DISTINCT

- (viii) Write a output for SQL queries (a) and (b), and SQL queries for (c) to (e), which are based on the table: STUDENT (4)

| 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   |

- a) SELECT COUNT(\*), City FROM STUDENT GROUP BY CITY HAVING COUNT(\*)>1;
- b) SELECT MAX(DOB),MIN(DOB) FROM STUDENT;
- c) To display the records from table student in alphabetical order as per the name of the student.
- d) To display Class, Dob and City whose marks is between 450 and 551.
- e) To display Name, Class and total number of students who have secured more than 450 marks, class wise
5. (i) \_\_\_\_\_ is a term for access control technologies that are used by hardware manufacturers, publishers, copyright holders and individuals to limit the use of digital content and devices. (1)
- (ii) Write any two features of open source and open data. (1)
- (iii) What are the different types of cybercrimes? Explain. (2)
- (iv) Describe measures to recycle your e-waste safely. (2)
- (v) What are the features that make biometric systems most authenticated and trusted. (2)
- (vi) Explain some common forms of student plagiarism. (2)