# ST. ANTHONY PUBLIC SCHOOL PARA
## PREBOARD-1
### [(SUBJECT:- COMPUTER SCIENCE) ( CLASS:-XII)]

**MM:-35**                                                                              **Duration:- 3 Hrs.**

**Note:- All questions are compulsory**
   **Some question have internal choices.**
### Part-A Section-I  [Attempt any 15 questions]

**Very short Answer type questions**                                                    **[15x1=15]**

Q-1   Which of the following are not valid strings in Python?                              1
      (a)"Hello"     (b) 'Hello'     (c)"Hello'     (d) 'Hello"     (e) {Hello}

Q-2   From the string S = "CARPE DIEM". Which ranges return "DIE" and "CAR"?               1

Q-3   What is the length of the tuple shown below?                                         1
      **T = (((('a', 1), 'b', 'c'), 'd', 2), 'e', 3)**

Q-4   **What is the output produced by the following code –**                             1
      d1={5:[6,7,8],"a":(1,2,3)}
       print(d1.keys())
       print(d1.values())

Q-5   Name the modules to which the following func-tions belong:                           1
      a) Uniform ()        b) fabs ()

Q-6   What are default arguments?                                                         1

Q-7   What is the difference between **"w"** and **"a"** modes ?                          1

Q-8   What is the significance of file object in data file handling?                      1

Q-9   Which protocol is used in video calling                                            1

Q-10  What is cartesian product in relational algebra?                                    1

Q-11  Write the names of any two DDL commands                                            1

Q-12  What are aggregate function in MySql                                               1

Q-13  Name The transmission media best suitable for connecting to hilly areas.           1

Q-14  Why list can't be used as key in dictionary                                        1

Q-15  Explain the use of LIKE caluse in MySql.                                           1

Q-16  Which functions would you chose to use to remove leading and trailing white spaces from a given string?   1

Q-17  Write the expanded form of DPR.                                                    1

Q-18  Which of the following types of table constraints will prevent the entry of duplicate rows?   1
          a) Unique          b) Distinct          c) Primary Key          d) NULL

Q-19  Explain any two roles of DBA                                                       1

Q-20  What are global variables?                                                         1

Q-21  What is Candidate key?                                                             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  A departmental store MyStore is considering to maintain their inventory using SQL to store the data. As a database administer, Abhay has decided that :
      Name of the database - **MyStore**        Name of the table - **STORE**
      **The attributes of STORE are as follows:**
       1) ItemNo - numeric   2) ItemName   character of size 20     3) Scode - numeric   4) Quantity – numeric

| Table : STORE | | | |
|---|---|---|---|
| ItemNo | ItemName | Scode | Quantity |
| 2005 | Sharpener Classic | 23 | 60 |
| 2003 | Ball Pen 0.25 | 22 | 50 |
| 2002 | Get Pen Premium | 21 | 150 |
| 2006 | Get Pen Classic | 21 | 250 |
| 2001 | Eraser Small | 22 | 220 |
| 2004 | Eraser Big | 22 | 110 |
| 2009 | Ball Pen 0.5 | 21 | 180 |

| | | |
|---|---|---|
| i) | Identify the attribute best suitable to be declared as a primary key, | 1 |
| ii) | ) Write the degree and cardinality of the table STORE. | 1 |
| iii) | Insert the following data into the attributes ItemNo, ItemName and SCode respectively in the given table STORE. **ItemNo = 2010, ItemName = "Note Book" and Scode = 25** | 1 |
| iv) | Abhay want to remove the table STORE from the database MyStore. Which command will he use from the following:<br>   a) **DELETE FROM store;**<br>   b) **DROP TABLE store;**<br>   c) **DROP DATABASE mystore;**<br>   d) **DELETE store FROM mystore;** | 1 |
| v) | (e) Now Abhay wants to display the structure of the table STORE, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same. | 1 |
| Q-23 | Ranjan Kumar of class 12 is writing a program to create a CSV file "user.csv" which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task. | |

```
import _____                               # Line 1
def addCsvFile(UserName,PassWord): # to write / add data into the CSV file
        f=open(' user.csv','_____')              # Line 2

#csv file reading code
def readCsvFile(): # to read data from CSV file with
        open(' user.csv','r') as newFile:
        newFileReader = csv._____(newFile)            # Line 3 for row in newFileReader:
        print (row[0],row[1])
 newFile._____ # Line 4

addCsvFile("Arjun","123@456")
addCsvFile("Arunima","aru@nima")
addCsvFile("Frieda","myname@FRD")
readCsvFile()                                      #Line 5
```

| | | |
|---|---|---|
| a) | Name the module he should import in Line 1. | 1 |
| b) | In which mode, Ranjan should open the file to add data into the file | 1 |
| c) | Fill in the blank in Line 3 to read the data from a csv file. | 1 |
| d) | Fill in the blank in Line 4 to close the file. | 1 |
| e) | Write the output he will obtain while executing Line 5. | 1 |

**PART-B SECTION-I**

Q-24 **Evaluate the following expressions:** a) 6 * 3 + 4**2 // 5 – 8      b) 10 > 5 and 7 > 12 or not 18 > 3    **2**

Q-25 Differentiate between Viruses and Worms in context of networking and data communication threats. **OR**  **2**
Differentiate between Web server and web browser. Write any two popular web browsers.

Q-26 **Expand the following terms:**    **2**
a) DPR     b) DTR     c) FLOSS     d) IPR

Q-27 Differentiate between actual parameter(s) and a formal parameter(s) with a suitable example for each. **OR**  **2**
Explain the use of global key word used in a function with the help of a suitable example.

Q-28 **Rewrite the following code in Python after removing all syntax error(s). Underline each correction done**  **2**
**in the code.**

```
Value=30
for VAL in range(0,Value)
    If val%4==0:
        print (VAL*4)
    Elseif val%5==0:
        print (VAL+3)
    else
        print(VAL+10)
```

Q-29 What possible outputs(s) are expected to be displayed on screen at the time of execution of the program  **2**
from the following code? Also specify the maximum values that can be assigned to each of the variables
Lower and Upper.
**import random**
**AR=[20,30,40,50,60,70]**
 **Lower =random.randint(1,3)**
**Upper =random.randint(2,4)**
**for K in range(Lower, Upper +1):**
      **print (AR[K],end="#")**

**(i) 10#40#70#**         **(ii) 30#40#50#**         **(iii) 50#60#70#**         **(iv) 40#50#70#**

Q-30 What do you understand by Alternate Keys in a table? Give a suitable example of Candidate Keys from a  **2**
table containing some meaningful data

Q-31 Differentiate between execute() and cursor() methods with suitable examples for each  **2**

Q-32 Write the full forms of DDL and DML. Write any two commands of DML in SQL.  **2**

Q-33 Find and write the output of the following Python code:  **2**
```
def Display(str):
    m="  "
    for i in range(0,len(str)):
        if(str[i].isupper()):
            m=m+str[i].lower()
        elif str[i].islower():
            m=m+str[i].upper()
        else:
            if i%2==0:
                m=m+str[i-1]
            else:
                m=m+"#"
    print(m)
Display("Fun@Python3.0")
```

Q-34    Write a function LShift(Arr,n) in Python, which accepts a list Arr of numbers and n is a numeric value by      **3**
which all elements of the list are shifted to left.
**Sample Input Data of the list Arr= [ 10,20,30,40,12,11], n=2**
**Output Arr = [30,40,12,11,10,20]**

Q-35    Write a method/function DISPLAYWORDS() in python to read lines from a text file STORY.TXT, and display      **3**
those words, which are less than 4 characters.      **OR**
Write a user defined function in Python that displays the number of lines starting with 'H' in the file
story.txt. **Eg: if the file contains:**

<div align="center">

Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow.

</div>

**Then the line count should be 2**

Q-36    **Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below:**

Table : Teacher

| T_ID | Name | Age | Department | Date_of_join | Salary | Gender |
|------|------|-----|------------|--------------|--------|--------|
| 1 | Jugal | 34 | Computer Sc | 10/01/2017 | 12000 | M |
| 2 | Sharmila | 31 | History | 24/03/2008 | 20000 | F |
| 3 | Sandeep | 32 | Mathematics | 12/12/2016 | 30000 | M |
| 4 | Sangeeta | 35 | History | 01/07/2015 | 40000 | F |
| 5 | Rakesh | 42 | Mathematics | 05/09/2007 | 25000 | M |
| 6 | Shyam | 50 | History | 27/06/2008 | 30000 | M |
| 7 | Shiv Om | 44 | Computer Sc | 25/02/2017 | 21000 | M |
| 8 | Shalakha | 33 | Mathematics | 31/07/2018 | 20000 | F |

Table : Posting

| P_ID | Department | Place |
|------|------------|-------|
| 1 | History | Agra |
| 2 | Mathematics | Raipur |
| 3 | Computer Science | Delhi |

i)      SELECT Department, count(*) FROM Teacher GROUP BY Department;      **1**

ii)     SELECT Max(Date_of_Join),Min(Date_of_Join) FROM Teacher;      **1**

iii)    SELECT Teacher.name,Teacher.Department, Posting.Place FROM Teachr, Posting WHERE      **1**
Teacher.Department = Posting.Department AND Posting.Place="Delhi";

Q-37    **Write SQL commands for the following queries (i) to (v) based on the relations Teacher and Posting given
below:**

i)      To show all information about the teacher of History department.      **1**

ii)     To list the names of female teachers who are in Mathematics department.      **1**

iii)    To list the names of all teachers with their date of joining in ascending order.      **1**

iv)     To display teacher's name, salary, age for male teachers only      **1**

v)      To display name, bonus for each teacher where bonus is 10% of salary.      **1**

Q-38    Write a function in Python PUSH(Arr), where Arr is a list of numbers. From      **3**
this list push all numbers divisible by 5 into a stack implemented by using a
list. Display the stack if it has at least one element, otherwise display
appropriate error message.                      **OR**
Write a function in Python POP(Arr), where Arr is a stack implemented by a
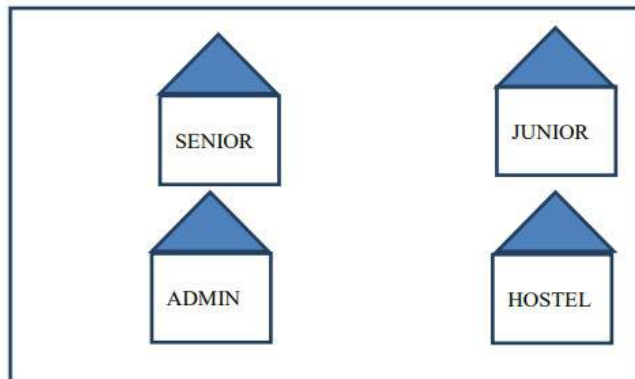list of numbers. The function returns the value deleted from the stack.

Q-39    **A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price].**      **5**
  i. Write a user defined function CreateFile() to input data for a record and add to Book.dat .

ii. Write a function CountRec(Author) in Python which accepts the Author name as parameter and count
and return number of books by the given Author are stored in the binary file "Book.dat"

**OR**

A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage). Write a function
countrec() in Python that would read contents of the file "STUDENT.DAT" and display the details of those
students whose percentage is above 75. Also display number of students scoring above 75%

Q-40    Multipurpose Public School, Bangluru is Setting up the network between its Different Wings of school    **5**
campus. There are 4 wings named as **SENIOR(S) , JUNIOR(J) , ADMIN(A) and HOSTEL(H).**
Multipurpose Public School, Bangluru



**Distance between various wings are given below:**

| WingAtoWingS | 100m |
|---|---|
| WingAtoWingJ | 200m |
| WingAtoWingH | 400m |
| WingStoWingJ | 300m |
| WingStoWingH | 100m |
| WingJtoWingH | 450m |

Number of Computers installed at various wings are as follows:

| Wings | NumberofComputers |
|---|---|
| WingA | 20 |
| WingS | 150 |
| WingJ | 50 |
| WingH | 25 |

| i | Suggest the best wired medium and draw the cable layout to efficiently connect various wings of Multipurpose PublicSchool, Bangluru. |
|---|---|
| ii | Name the most suitable wing where the Server should be installed . Justify your answer |
| iii | Suggest a device/software and its placement that would provide data security for the entire network of the School. |
| iv | Suggest a device and the protocol that shall be needed to provide wireless Internet access to all smartphone/laptop users in the campus of Multipurpose Public School, Bangluru. |
| v | Suggest the placement of following devices<br>    a) HUB/SWITCH    b) REPETER |