

CENTRE FOR ADVANCEMENT OF STANDARDS IN EXAMINATIONS
(GEMS ASIAN SCHOOLS)
COMMON REHEARSAL EXAMINATIONS - JANUARY 2021
(ALL INDIA SENIOR SCHOOL CERTIFICATE EXAMINATION)

Subject: COMPUTER SCIENCE-PYTHON
Subject Code: 083

Time : 3 Hrs
Max. Marks: 70

General Instructions

- This question paper contains two parts A and B. Each part is compulsory.
- Both Part A and Part B have choices.
- Part-A has 2 sections:
 - a. Section – I is short answer questions, to be answered in one word or one line.
 - b. Section – II has two case studies questions. Each case study has 4 case-based sub-parts.
An examinee is to attempt any 4 out of the 5 subparts.
- Part - B is Descriptive Paper.
- Part- B has three sections
 - a. Section-I is short answer questions of 2 marks each in which two question have internal options.
 - b. Section-II is long answer questions of 3 marks each in which two questions have internal options.
 - c. Section-III is very long answer questions of 5 marks each in which one question has internal option.
- All programming questions are to be answered using Python Language only

Question Number	PART A	Marks Allocated
	Section-I	
	Select the most appropriate option out of the options given for each question.	
	Attempt any 15 questions from question number 1 to 21.	
1	Find the invalid identifier from the following a) print b) 1stname c) none d) MY AGE	1
2	Given the list NUM=[3, 8, 11, 1, 7, 9], write the output of print(NUM[-2:-6:-2])	1
3	Write the module name required for writer () function.	1
4	Identify the valid logical operator in Python from the following. a) += b) // c) or d) >	1
5	Raj is trying to create a tuple T with single element. Please help him to create with a list [10,20]. Write the Python statement for this.	1
6	Write a statement in Python to declare a dictionary D whose keys are brand, model, year and values are Ford, Mustang, 1964 respectively.	1

- 7 Consider the tuple $T = (1, 2, 'A', 'B')$. Use variables p, q, r, s to unpack individual values from the given tuple. Write single python statement for this. 1
- 8 Name the built-in function / method that is used to return the smallest integer not less than a number N . 1
- 9 Name the protocol that is used to communicate between two routers directly without any host or any other networking in between. 1
- 10 How will you protect your computer from cyber attackers by shielding your computer or network from malicious or unnecessary network traffic? 1
- 11 In SQL, name the clause that is used for pattern matching. 1
- 12 In SQL, what is the use of DESCRIBE? 1
- 13 Krithika wants to display the total number of shirts in each size. Write the name of the aggregate function used in SQL. 1
- 14 Which of the following are DML commands?
a) SELECT b) DROP c) DELETE d) CREATE 1
- 15 Name the switching technique that required physical path between source and destination in a network. 1
- 16 What will the output for the following code?
`L=['cbse', 2020]`
`L = L*2`
`print(L)` 1
- 17 If the following code is executed, what will be the output of the following code?
`s="escape sequence"`
`s.find('e', 6)` 1
- 18 Ajay is a database programmer, he has to write the query from EMPLOYEE table to search for the employee who are not getting any commission, for this he has written the query as:
`SELECT * FROM EMPLOYEE WHERE COMMISSION=NULL;`
But the query is not producing the correct output, help Ajay and correct the query so that he gets the desired output. 1
- 19 Write the expanded form of ARPANET? 1
- 20 Which of the following types of table constraints that will ensure referential integrity of the data?
a) check b) default c) foreign key d) not null 1
- 21 Rearrange the following terms in decreasing order of geographical coverage area. 1

MAN, PAN, WAN, LAN

Section-II

Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark

22 Dev is an accountant and decided to maintain a database to store the employee's salary details based on their basic pay.

- Name of database - EXPENSE
- Name of the table - SALARY
- The attributes of SALARY are as follows:

ID - numeric

Name - character of size 35

Basic - decimal number

Allowance - numeric

Table: SALARY

ID	Name	Basic	Allowance
101	Renuka K	15000	1500
104	Gupta S	17000	1200
107	Janvi P K	16000	1000
114	Theressa M	20000	2200
109	Shekar D	18000	1000
105	Paulson M	15000	1200
117	Rekha V	18000	1700
111	Uurmi Ajay	20000	1500
130	Peter Paul	18000	1200

- a) Identify the attribute(s) best suitable to be declared as a candidate key. 1
- b) Write the degree and cardinality of the table SALARY. 1
- c) Insert the following data into the attributes ID, Name, Basic and Allowance respectively in the given table SALARY. 1
ID = 150, Name = 'Raj Malhotra', Basic = 19000.50, Allowance = 1300
- d) Dev want to remove the table SALARY from the database EXPENSE. Write the SQL command. 1
- e) Dev wants to change the column NAME to EMP_NAME in the table SALARY. Write the query for the same. 1

23 Srihari is writing a program to create a CSV file "notes.csv" which will contain subject name and total number of chapters 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(SubName, chap_nos): # to write / add data into the CSV file
    f=open(' notes.csv','a', newline)
    newFileWriter = csv. _____ # Line 2
    newFileWriter.writerow( _____ ) # Line 3
    f.close()
#csv file reading code

def readCsvFile(): # to read data from CSV file
    with open(' notes.csv', 'r') as newFile:
        newFileReader = csv. _____ # Line 4
        for row in newFileReader:
            print (row[0], "##", row[1], end="\n")
        newFile.close()

addCsvFile("Biology", 14)
addCsvFile("Computer Science",15)
addCsvFile("Accountancy","20")
readCsvFile() #Line 5

```

- a) Name the module he should import in Line 1. 1
- b) Fill in the blank in Line 2 to write the data to a csv file. 1
- c) Fill in the blank in Line 3 to pass the data to a csv file. 1
- d) Fill in the blank in Line 4 to read the data from a csv file. 1
- e) Write the output he will obtain while executing Line 5. 1

PART B

Section I

- 24 Evaluate the following expressions: 2
 - a) $19\%4 - 17 / 2 * 3 + 2^{**}3 + 5 // 2$
 - b) $1 > 1$ or not $1 > 2$ or $2 > 3$
- 25 Differentiate between IPR and hacking in context of data communication threats and prevention in computer networking. 2

OR

 Differentiate between star and bus topology.
- 26 Expand the following terms: 2
 - a) CDMA b) POP3 c) VoIP d) HTTP
- 27 Differentiate between local variable and global variable? Also, give a suitable Python code to illustrate both. 2

OR

What is module, package and a library in Python?

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

```
Num=int(input("Number:"))
Sum=0
for i in range(10,Num,3)
    Sum+=i
if i%2=0:
    print(i*2) Else:
    print(i*3printSum)
```

- 29 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 each of the variables x and y. 2

```
import random
NUM=[1,2,3,4,5,6,7,8];
x=random.randint(2,4)
y=random.randint(5,7)
for i in range(x, y +1):
    print (NUM[i], end="@")
```

a) 3@4@5@ b) 3@4@5@6@ c) 4@5@ d) 5@6@7@8@

- 30 What is the use of UPDATE statement in SQL? How is it different from ALTER statement? 2

- 31 Write a MySQL-Python connectivity to retrieve data, one record at a time, from city table for employees with id less than 10. 2

- 32 What is the significance of WHERE and HAVING clause in a SQL query? 2

- 33 Find and write output of the following code: 2

```
def output(mystr, chgstr=""):
    count = 0
    for i in mystr:
        if count%2 ==0:
            chgstr = chgstr +str(count)
```

```

else:
    if i.islower():
        chgstr = chgstr + i.upper()
    else:
        chgstr = chgstr + i
count +=1
chgstr = chgstr +mystr[-2]
return chgstr

print ("The new string is :", output('CBSE Exam 2020'))

```

Section- II

- 34 Write a function DELETE(A, n) in Python, which accepts a list A of numbers and n is the position of the element to be deleted from the list. Also return the deleted element if element is present; otherwise return appropriate error message. 3

Sample Input Data of the list

If A = [1, 2, 3, 4, 5, 6] and n=2 , then output is A = [1, 3, 4, 5, 6]

- 35 Assume that a text file named ADDRESS.TXT already contains some text written into it. Write a function to read the contents of the file and replace all words "Delhi" with "New Delhi" and write the changed data into a new file called NEWADDRESS.TXT file. (for both lower and upper case) 3

For example if ADDRESS.TXT file contains the following data:

T01, Rakesh Sharma, 245-Malviya Nagar, Delhi
T02, Jugal Mittal, 34-Ramesh Nagar, Patna
T03, Sandeep Kaushik, MG-32-Shalimar Bagh, Delhi

then the file NEWADDRESS.TXT shall contain:

T01, Rakesh Sharma, 245-Malviya Nagar, New Delhi
T02, Jugal Mittal, 34-Ramesh Nagar, Patna
T03, Sandeep Kaushik, MG-32-Shalimar Bagh, New Delhi

OR

Write a function CharCount() in Python, which should read each character of a text file GENERATION.TXT, should count and display the occurrence of characters other than alphabets and digits.

Example:

If the file content is as follows:

The period of first generation computers is 1946-1959.

The period of second generation computers is 1959-1965.

The CharCount() function should display the output as:

Count = 18

- 36 Consider the following tables DRESS and MATERIAL and write the outputs of the SQL queries (i) to (iii) based on the relations given. 3

Table : Dress				
Dcode	Description	Price	Mcode	Launchdate
1001	Formal Shirt	1250	M001	12/01/2008
1020	Frock	750	M004	09/11/2007
1012	Informal Shirt	1450	M002	06/05/2003
1019	Evening Gown	850	M003	31/03/2007
1090	Tulip Skirt	850	M002	19/12/2008

Table : Material	
Mcode	Type
M001	TERELENE
M004	COTTON
M003	POLYSTER
M002	SILK

- (i) SELECT M.Mcode, D.SUM(Price) FROM Material M, Dress D
GROUP BY Mcode ;
- (ii) SELECT min(Launchdate) FROM Material ;
- (iii) SELECT Dress.Dcode, Material.Type FROM Dress, Material WHERE
Dress.Mcode=Material.Mcode AND Dress.Dscription LIKE "%irt" ;

- 37 Write a function in Python PUSH(N), where N is a list of numbers. From this list push all numbers ends by 2 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. 3

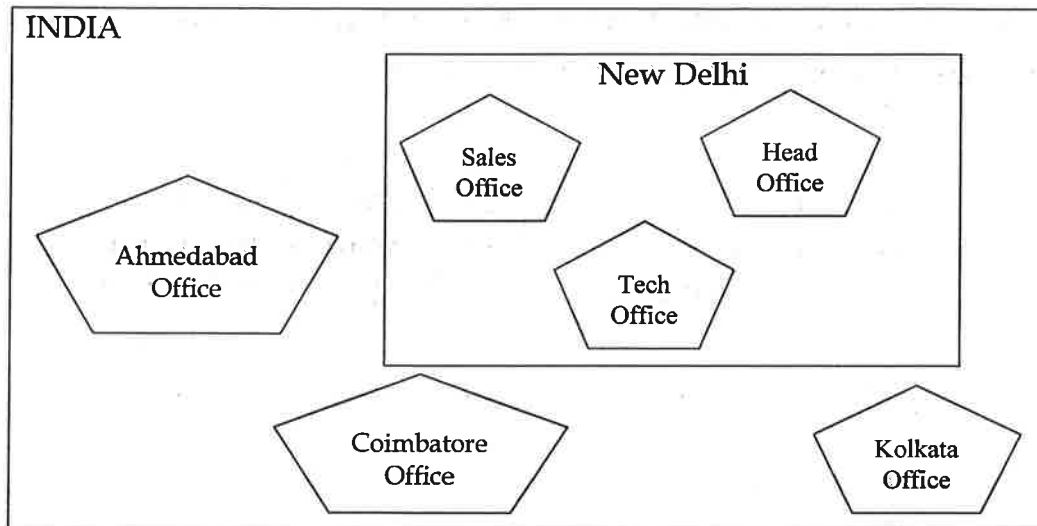
OR

Write the functions in Python

- POP(L) to delete names from the stack L.
- Display(L) to display the stack if it has at least one element; otherwise display appropriate error message.

Section- III

- 38 Hindustan Connecting World Association is planning to start its offices in four major cities in India to provide regional IT infrastructure support in the field of Education & Culture. The company has planned to set up its head office in New Delhi at three locations and has named in New Delhi offices as "Sales Office", "Head Office" and "Tech Office". The company's regional offices are located at "Coimbatore", "Kolkata" and "Ahmedabad". 5



Appropriate distance between these offices as per the network survey team is as follows:

Place From	Place To	Distance
Head Office	Sales Office	10 KM
Head Office	Tech Office	70 Meter
Head Office	Kolkata Office	1291 KM
Head Office	Ahmedabad Office	790 KM
Head Office	Coimbatore Office	1952 KM

In continuation of the above, the company experts have planned to install the following number of computers in each of their offices:

Head Office	100
Sales Office	20
Tech Office	50
Kolkata Office	50
Ahmedabad Office	50
Coimbatore Office	50

- Suggest a cable / wiring layout for connecting the company's local offices located in New Delhi. Also suggest an effective method/ technology for connecting the company's regional offices - "Coimbatore", "Kolkata" and "Ahmedabad".
- Suggest network type (out of LAN, MAN, WAN) for connecting each of the following set of their offices:
 - Head Office and Tech Office
 - Head Office and Coimbatore Office

- c) Which device will you suggest to be procured by the company for connecting all the computers within each of their offices?
- d) Which of the following communication medium, will you suggest to be procured by the company for connecting their local offices in New Delhi for very effective and fast communication?
- Ethernet Cable
 - Optical Fiber
 - Telephone Cable
- e) Which protocol will be most helpful to conduct live interactions of experts from Head Office and people at all locations of company?

39 Write SQL commands for the following queries (i) to (v) based on the relations Dress and Material given below: 5

Table : Dress				
Dcode	Description	Price	Mcode	Launchdate
1001	Formal Shirt	1250	M001	12/01/2008
1020	Frock	750	M004	09/11/2007
1012	Informal Shirt	1450	M002	06/05/2003
1019	Evening Gown	850	M003	31/03/2007
1090	Tulip Skirt	850	M002	19/12/2008
1023	Pencil Skirt	1250	M003	20/10/2008
1089	Slacks	850	M003	09/03/2008
1007	Formal Pant	1450	M001	20/10/2008

Table : Material	
Mcode	Type
M001	TERELENE
M004	COTTON
M003	POLYSTER
M002	SILK

- i) To display Dcode and Description of each dress in descending order of Dcode.
- ii) To display the details of all those dresses which have Launchdate in between 05/12/2007 and 20/06/2008 using between clause (inclusive both dates).
- iii) To display the average price of all those dresses which are made up of material with Mcode as M003.
- iv) To display type wise the highest and lowest price of dresses.

(Display Mcode of each dress along with highest and lowest price)

v) To display description and price from table Dress whose description starts with letter 'F' and price greater than 1000.

40 A binary file "TELE.DAT" contains customer's name and telephone numbers. Write functions to do the following:

5

i) Append the records in the file

ii) Display the name for the given telephone number. If the telephone number does not exist then display error message: "Record Not Found".

OR

A binary file "EMP.DAT" contains data attribute like : ecode, name and salary. Write function definition DISPLAY() in Python that would read the employee data and display all the objects on the screen where salary is between 40000 and 60000.

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COMMON REHEARSAL EXAMINATIONS 2022**

(ALL INDIA SENIOR SCHOOL CERTIFICATE EXAMINATION)

COMPUTER SCIENCE (Code: 083)

Maximum Marks: 35

Time: 2 hours

General Instructions

- The question paper is divided into 3 sections – A, B and C
- Section A, consists of 7 questions (1-7). Each question carries 2 marks.
- Section B, consists of 3 questions (8-10). Each question carries 3 marks.
- Section C, consists of 3 questions (11-13). Each question carries 4 marks.
- Internal choices have been given for question numbers 7, 8 and 12.

**Section -A
Each question carries 2 marks**

Questions

- | | | | |
|----|------|---|---|
| 1. | (i) | Identify the stack applications from the following applications:
Parenthesis checking, Printer spooling, Keyboard buffering, String reversal,
Mail Service, Expression conversion, CPU scheduling, Function call. | 1 |
| | (ii) | Name the stack operations which results into:
(i) stack overflow and
(ii) stack Underflow. | 1 |
| 2. | (i) | Expand the following:
(i) RJ45
(ii) SMTP | 1 |
| | (ii) | Give suitable examples of:
(i) IP address and
(ii) URL | 1 |
| 3. | | Distinguish between WHERE clause and HAVING clause. Give suitable examples. | 2 |
| 4. | | What are the four different parameters in connect() function of mysql.connector? | 2 |

5. Write the output of the queries (i) to (iv) based on the table Product given below: 2

PIId	P_Name	P_Price	P_Qty	Date_Of_Purchase
P001	Keyboard	800	3	2022-01-01
P002	Mouse	380	6	2021-12-23
P003	Speaker	1800	3	2022-01-01
P004	Headphone	1000	6	2021-10-02
P005	Stylus	3000	2	2022-01-19

- (i) Select P_Name, P_Price from Product Where P_Price>1500;
- (ii) Select PIId, P_Name, P_Price * P_Qty from Product Where P_Name Like 'e';
- (iii) Select Max(Date_Of_Purchase) from Product Where P_Price>500;
- (iv) Select Sum(P_Price) from Product Where P_Price * P_Qty >3000;

6. (i) Distinguish between ALTER and UPDATE commands in SQL. 1
- (ii) How will you calculate columns and rows in a cross join or Cartesian Product? 1

7. Consider the table Employee with the following records: 2

Emp_ID	Emp_Name	Designation	Salary	Date_of_Joining
E101	Kanishk Arya	Manager	80000	2010-09-01
E102	Shuchi Sharma	Marketing Head	75000	2012-10-10
E103	Simran Gupta	Accounts Head	72000	2015-03-05
E104	Deepak Malhotra	Sales Head	55000	2018-02-09

- (i) What could be the possible reason when inserting a new row using the following command gives an error? Justify your answer.

Insert Into Employee Values('E104', 'Jai Gupta', 'Manager', 80000, '2020-12-10');

- (ii) What would be the cardinality and degree of the table when 3 more rows are added to the table?

OR

Consider the table PF_Details and answer the following questions:

PF_No	Date_of_Birth	email-id	Emp_ID
12255	1990-09-09	ka200@gmail.com	E101
13366	1991-10-08	shuch100@gmail.com	E102
11188	1994-01-02	simran2000@yahoo. com	E103
55599	1997-02-09	Deepak_500@gmail.com	E104

- (i) Identify the Primary and Foreign keys of table PF_Details if the Employee table given above is linked to this table.
- (ii) Can we delete the record of any employee from the table PF_Details?

Section B

Each question carries 3 marks

8. Shruti has created a dictionary that stores Product names as key and price as values. Write a user-defined function to perform the following operations: 3

- Push the values into the stack if the price of products is greater than 100.
- Pop and display the contents of the stack.

For example, if the content of the dictionary is as follows:

product={'Book':250, 'Pen':120, 'Pencil':50, 'Notebook':400, 'Register':480}

The elements of the stack should be:

[250, 120, 400, 480]

OR

Prateek has created a list arr with some elements. Help him to create a user-defined function to perform the following tasks:

- Create a stack after checking the elements if it is even then multiply by 2 and if the element is odd, then multiply it by 3.
- Pop and display the contents of the stack.

Sample Input Data of the list arr = [2,3,4,5,6,7,8,9,10]

Output stack: NewSt = [4, 9, 8, 15,12, 21, 16, 27,20]

9. (i) A table Transport is created with the following columns: 1
 Bus_No, Bus_route, Area, No_of_students, Helper_Name, Charges
 Write an SQL command to increase the Bus charges by 12% for all students.
- (ii) Identify the commands and categorize them into DDL and DDL commands. 2
- (i) To add a new row into the table.
 (ii) To modify the datatype of the column of a table.
10. Ms. Swati has created a database MySchool and wants to create a table in SQL to store the records of students. The structure of the table Student is given below: 3

Table: Student

ColumnName	Data type	size	Constraint
RollNo	Integer	4	Primary Key
Sname	Varchar	25	Not Null
Gender	Char	1	Not Null
DOB	Date		Not Null
Fees	Integer	4	Not Null
Hobby	Varchar	15	Null

- (i) Write SQL command to create table Student.
 (ii) Write SQL command to delete column Hobby.

Section C

Each question carries 4 marks

11. Consider the following tables Product and Client. Write SQL commands for the statements (i) to (iv). 4

Table: Product

P_ID	ProductName	Manufacturer	Price	Discount
TP01	Talcum Powder	LAK	40	NULL
FW05	Face Wash	ABC	45	5
BS01	Bath Soap	ABC	55	NULL
SH06	Shampoo	XYZ	120	10
FW12	Face Wash	XYZ	95	NULL

Table: Client

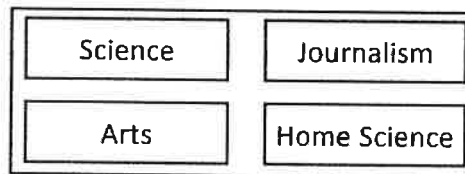
C_ID	ClientName	City	P_ID
01	Cosmetic Shop	Delhi	TP01
02	Total Health	Mumbai	FW05
03	Live Life	Delhi	BS01
04	Pretty Woman	Delhi	SH06
05	Dreams	Delhi	FW1

- (i) To display ProductName, Price and ClientName City-wise.
 - (ii) To display the sum of the price of all products where there is no discount.
 - (iii) To display the name of manufacturer with the maximum price manufacturer-wise.
 - (iv) To count the total number of different manufacturers.
- 12 (i) Give one advantage of bus topology. Also, draw how four computers can be connected with each other in the star topology. 2

OR

Define the following terms:

- (i) Wi-Fi,
 - (ii) FTP
- (ii) Differentiate between Router and Gateway. 2
13. The University of Correspondence in Allahabad is setting up a network between its different wings. There are 4 wings named Science (S), Journalism (J), Arts (A) and Home Science (H) 4



Distance between various wings:

Wing A to Wing S	100 m
Wing A to Wing J	200 m
Wing A to Wing H	400 m
Wing S to Wing J	300 m
Wing S to Wing H	100 m
Wing J to Wing H	450 m

Number of Computers:

Wing A	150
Wing S	10
Wing J	5
Wing H	50

- (i) Suggest and draw a cable layout to efficiently connect various wings of the building within the university.

- (ii) Name the wing where the Server is to be installed. Justify your answer.
- (iii) Suggest the placement of the Repeater in the network.
- (iv) The university is planning to establish the online classes. Name two applications that can be used to schedule and manage online classes.

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COMPUTER SCIENCE-PYTHON (Code: 083)

Maximum Marks: 70

Time: 3 hours

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 03 Long Answer type questions carrying 05 marks each. One internal choice is given in Q31 against part d only.
7. Section E has 02 questions carrying 04 marks each.
8. All programming questions are to be answered using Python Language only.

SECTION A

1. Which of the following is an invalid identifier in Python? 1
(a) `_area` (b) `While` (c) `boolean` (d) `finally`
2. `Str1='CASE Examination 2023'`
`L=Str1.partition('Exam')`
`print(len(L))` 1
(a) 4 (b) 3 (c) 2 (d) 1
3. Which of the following will be the correct output if the given expression is evaluated? 1
`-96-2**2**3//2-1`
(a) Error (b) -177 (c) -225 (d) None of these
4. Consider the below dictionary and predict the output. 1
`D={'Name':'Kevin'}`
`D.setdefault('age',22)`
`print(len(D))`
(a) 1 (b) 2 (c) 4 (d) None of these
5. State True or False 1
"Python function names can be used as variable/identifier"

6. Which of the following mode in a binary file will create a new file if the file does not exist? 1
(a) rb+ (b) wb+ (c) ab+ (d) both (b) and (c)
7. Which of the following characteristics are true in terms of primary key constraint? 1
(a) Primary Key does not allow repeated values in the Primary Key column.
(b) Primary Key does not allow NULL values in the Primary Key column.
(c) Only a
(d) Both (a) and (b)
8. What will be the output of the following code snippet? 1
X = ['xy','mn']
for I in X:
 I.upper()
print(X)
(a) ['xy', 'mn']
(b) ['XY', 'MN']
(c) Error
(d) None of the above
9. Which of the following statement is correct? 1
(a) A SQL query automatically eliminates duplicates.
(b) SQL permits attribute names to be repeated in the same relation.
(c) SQL query will not work if there is no primary key.
(d) None of these
10. Order by clause is used to arrange the records in 1
(a) Ascending order
(b) Descending order
(c) Both (a) and (b)
(d) None of these
11. Which of the following is not a SQL constraint? 1
(a) IS NULL (b) Primary key (c) Unique (d) Default
12. _____ is a device that connects dissimilar networks. 1
(a) MODEM (b) Repeater (c) Gateway (d) Router
13. Which of the following is correct after the following code is executed? 1
>>> T1 = (54, 23, 73, 40)
>>> result = T1.update(50,)

(a) T1 = (54, 23, 73, 40) and result = (54, 23, 73, 40, 50)
(b) T1 = (54, 23, 73, 40, 50) and result = (54, 23, 73, 40, 50)
(c) Error, because a tuple does not have an update function and is immutable.
(d) T1 = (54, 23, 73, 40) and result = (54, 23, 73, 40)

14. Consider the following Python code to display all the records from the table Tour. Assume that the necessary module has been imported and a connection object as **con** has been created. Execution of the below code causes an error. Choose the correct option to rectify it. 1

```
mycursor=con.cursor()
query = 'Select * from Tour'
mycursor .execute(query)
results = mycursor.fetchall()
for results in row:
    print(results)
```

- (a) fetchmany() should be used in place of fetchall()
- (b) fetchone() should be used in place of fetchall()
- (c) print(row) should be used in place of print(results)
- (d) for loop should be written as:
for row in results:
print(row)

15. _____ is a set of values from which an attribute can take a value in each record. 1
- (a) Row (b) Column (c) Domain (d) Degree

16. Which of the following statement(s) is/are true about URL? 1
- (a) URL stands for Uniform Resource Locator.
(b) You can enter URL into address bar.
(c) Both (a) and (b)
(d) It is not necessary for URL to be unique.

Q17 and Q18 are ASSERTION and REASONING based questions. Mark the correct choice as

- (a) Both A and R are True, and R is the correct explanation for A
(b) Both A and R are True, and R is not the correct explanation for A
(c) A is True and R is False
(d) A is False but R is True

17. Assertion (A): Dictionary is an unordered collection of data values that stores key:value pair. 1

Reason (R): Immutable means they cannot be changed after creation.

18. Assertion (A): A function is a block of organized and reusable code that is used to perform a single, related operation. 1

Reason (R): Function provides better modularity for your application and a high degree of code reusability.

SECTION B

19. Praveen has written Python code to check whether the given number is positive odd/even or negative odd/even. His code contains a few errors. Rewrite the code correctly and underline the corrections made. 2

def checkval:

```
x = int(input("Enter a number"))
```

```
if x>0:
```

```
    if x%2==0:
```

```
        print(x,'is positive even')
```

```
    else:
```

```
        print(x,'is positive odd')
```

```
else if x<0:
```

```
    if x%2==0:
```

```
        print(x,'is negative even')
```

```
    else:
```

```
        print(x,'is negative odd')
```

```
else
```

```
    print(x,"is zero")
```

```
checkval()
```

20. Write two points of difference between Star Topology and Bus Topology. 2

(OR)

Write any two advantages of coaxial cable.

21. (a) Predict the output of the following code snippet. 1

```
D = {101:['Rohit',80], 102:['Aman',64], 103:['Kunal',76]}
```

```
D1=D.copy()
```

```
D1[102][1] = 85
```

```
print(D)
```

```
print(D1)
```

- (b) What will be the output of the below code snippets? 1

```
print('GEMS Asian Schools Exam'.count('S'))
```

```
print(len('Good Learners Never Fails'.split()))
```

22. What is meant by 'Alternate Key' in a Relational Database Management System? Give an example to support your answer. 2

23. (a) Write the full form of the following. 2

(i) PPP (ii) TCP/IP

- (b) What is the purpose of a repeater in context of network communication?

24. (a) What will be the output(s) of the following code? Also write the minimum and maximum value stored in the variables x and y. 2

```
import random
N = [10, 20, 30, 40, 50, 60, 70, 80]
x = random.randint(2, 4)
y = random.randint(3, 6)
for i in range(x, y+1):
    print(N[i], end='#')
```

- (a) 30#40#50# (b) 30#50#20#60# (c) 50# (d) 50#60#70#80#

(OR)

- (b) Predict the output of the following code.

```
i = 9
while i > 1:
    if (i % 2 == 0):
        x = i % 2
        i = i - 1
    else:
        i = i - 2
        x = i
    print(x**2)
```

25. Consider a student table with an email column. The following two statements give different outputs. Give reason. 2

```
SELECT COUNT(*) FROM STUDENT;
SELECT COUNT(EMAIL) FROM STUDENT;
```

(OR)

Differentiate ALTER and UPDATE command with an example.

SECTION C

26. (a) Consider the following tables: Teacher and Student Teacher: 1+2

TID	TName	Subject
T001	Mohan	Science
T002	Revathy	English
T003	Aysha	Mathematics

Student:

SID	CLASS
S01	12A
S02	12B

What will be the output of the following SQL command?

SELECT * from Teacher, Student;

(b) Write the SQL command for the following queries based on the given table **STORE**.

ItemNo	ItemName	Scode	Qty	Price
2005	Sharpner	23	60	8
2003	Gel Pen	22	30	15
2002	Eraser	23	50	7
2006	Gel Pen Classic	21	10	12

- (i) To display the details of the items that have a price range between 12 and 15. (both values inclusive)
- (ii) To display the Item number, Item name and Price of all the Gel Pen Category.

27. Write a function **PALCOUNT()** in Python to count and display the count of all the palindrome words in a text file 'STORY.TXT'. 3

Example:

If the file contains:

My friend likes the civic car
The radar is monitoring the speed my racecar
My dad and mom bought many toys from noon online

The **PALCOUNT()** function should display the output as:
Number of Palindrome words in the file are: 6

(OR)

Write a function **ENDWITH()** in Python to count and display the count of all the lines whose 2nd last character is 'a' in the text file 'STORY.TXT'.

Example:

If the file contains:

I like the civic car
The radar is monitoring the speed my racecar

My dad and mom bought a toy from noon online

The ENDWITH() function should display the output as:
Number of lines with the 2nd last character 'a' are: 2

28. (a) Write the outputs of the SQL queries (i) to (iv) based on the relations GARMENT and FABRIC. 3

GARMENT

GCODE	DESCRIPTION	PRICE	FCODE
10023	PENCIL SKIRT	1150	F03
10021	FORMAL SHIRT	1250	F01
10090	BABY TOP	1550	F03
10024	INFORMAL SHIRT	750	F02
10020	FORMAL PANT	950	F02
10019	FROCK	850	F01
10022	TULIP SKIRT	820	F03
10025	SHOES	250	F05
10028	SAREES	1110	F06

FABRIC

FCODE	TYPE
F03	POLYSTER
F01	COTTON
F02	TERELENE
F05	LEATHER
F06	SILK

- (i) SELECT FCODE, COUNT(*) from GARMENT GROUP BY FCODE;
(ii) SELECT DISTINCT FCODE from GARMENT;
(iii) SELECT DESCRIPTION, TYPE from GARMENT G, FABRIC F WHERE
G.FCODE=F.FCODE and F.FCODE in ('F01',F05');
(iv) SELECT MIN(PRICE), MAX(PRICE) from GARMENT WHERE FCODE
not in ('F01','F03');

- (b) Write the SQL commands:

- (i) to display all the databases in MySQL.
(ii) to open the database "School".

29. Write a function **rmv_all_occurence(L,val)**, which deletes all the occurrences of an element from the list without any alternate list. 3

For example,

If the list L= [51, 52, 52, 55, 54, 52, 57, 56, 52, 58] and val=52

Output

L = [51, 55, 54, 57, 56, 58]

30. Aruna has a list of temperature readings from 10 cities. You need to help her to create a program with separate user defined functions to perform the following operations based on a list. 3
- Traverse the content of the list and push the negative temperatures into a stack.
 - Pop and display the content of the stack.

For example:

If the sample content of the list is as follows:

T=[-9,5,7,-8,3,6,10,-10,-6]

The elements of the stack should be:

[-6, -10, -8, -9]

(OR)

Shruthi has created a dictionary that stores product names as keys and prices as values. Write user defined functions to perform the following operations:

- Push the values into the stack if the price range is more than 20 and less than 30.
- Pop and display the content of the stack.

For example, if the content of the dictionary is as follows:

product = {'Book':25, 'Pen':20, 'Pencil':15, 'Register':22, 'Pouch': 10}

The elements of the stack should be

[22, 25]

SECTION D

31. Mohit created a table MOVIE and stored his favorite movies into it. Below is the table with his movie list. 3+2

MovieID	Duration	IMDbRating
M001	180	9.0
M002	160	8.5
M005	175	5.0
M004	180	7.5
M009	150	6.0
M008	130	5.8

- Mohit forgot to add a column YOR(Year of Release of the movie). Write a SQL command to insert a column YOR with int data type.
- What is the degree and cardinality of the table after adding the column YOR?
- Write the SQL command to insert the following details.
MovieID: M007 and IMDbRating: 6.5
- Is DDL or DML command will be used to remove the entire table including the records? Write the complete SQL command to delete the table MOVIE with its records.

(OR)

Write the SQL command to delete the IMDbRating column of the table MOVIE. Is it DDL or DML command?

32. (a) Write the output of the following code.

2+3

```
str1='CBSE_Schools23@gmail.com'
newT=""
for i in range(len(str1)):
    if str1[i].isalpha():
        if str1[i].islower():
            newT=newT+str1[i]
        else:
            newT=newT+str1[i].lower()
    elif str1[i].isdigit():
        newT=newT+str1[i]*2
    elif str1[i] in ['@', '.']:
        newT=newT+str1[i]
    else:
        newT=newT+'_'
print(newT)
```

(b) The code below is to insert records into the table student.

```
import mysql.connector as psql
con=psql.connect(host='localhost',user='root',passwd='tiger',database='school')
cur=_____ (#Statement 1)
rno=int(input('Enter the roll number: '))
name=input('Enter name: ')
mark=float(input('Enter mark: '))
query=_____ (Statement 2)
cur.execute(query)
con._____ (#Statement 3)
con.close()
```

Write the missing statements to complete the code.

Statement 1: to form the cursor object

Statement 2: to write the SQL query to insert rno, name, marks into the table

Statement 3: to add the record permanently in the database.

(OR)

(a) Predict the output of the following code.

```
x=25
def FUN(ch):
    global x
    x=50
    print(x,end=ch)
    x*=2
    print(x,end=ch)
print(x,end='*')
FUN('!')
print(x)
```

- (b) The code below is to delete the record from the table student.

```
import mysql.connector as psql
con=psql.connect(host='localhost',user='root',passwd='tiger',database='school')
cur=_____ (#Statement 1)
rno=int(input('Enter the roll number to delete: '))
query="delete from student where rollno= {}".format(rno)
cur._____(query) (#Statement 2)
con._____ (#Statement 3)
con.close()
```

Write the missing statements to complete the code.

Statement 1: to form the cursor object

Statement 2: to execute the command that deletes the record from the student table.

Statement 3: to add the record permanently in the database.

33. Write user defined functions for the following:

5

(a) APPEND() - To accept the product details and add it into the existing 'product.dat' file. Each record consists of a list with field elements as pid, pname and price to store product id, product name and price respectively.

(b) SEARCH() - To display the product id with product name where the product price is more than 15 dhs.

(OR)

Write user defined functions for the following:

(a) CREATE()- To accept the account details and write 5 account holders information into 'account.dat' file. Each record consists of a list with field elements as Accno, AName, balance and AType to store the account number, account holder name, balance and the account type (Savings or Current).

(b) DISPLAY() - To display the details of the accounts where the minimum balance is not maintained by the account holder. [Minimum balance for savings account is 1000 and the current account is 3000]

SECTION E

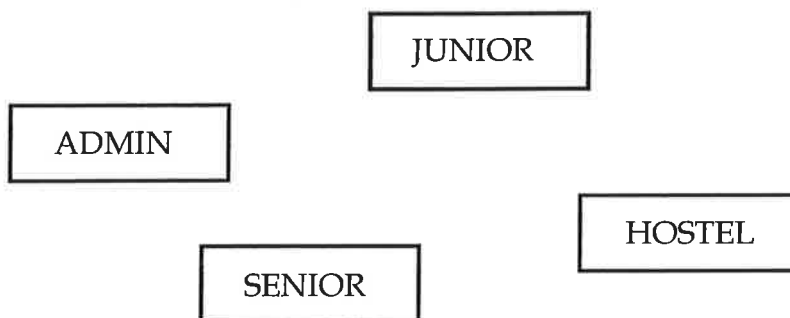
34. Jonathan is a class 12 student, and he got an incomplete code of a CSV file 'Product.csv' with the structure [PID, PNAME, PRICE]. Help him to complete the code which stores the data into the CSV file.

```

import csv
fh = open ('Product.csv', _____, newline=' ') #Statement 1
pwriter = csv.writer(fh)
data = [ ]
data._____(['PID','PNAME','PRICE']) #Statement 2
for i in range(3):
    pid=input('Enter product id')
    pname=input('Enter the name of the product')
    price=float(input('Enter the price of the product'))
    _____=[pid,pname,price] #Statement 3
    data.append(rec)
    _____.writerows(data) #Statement 4

```

1. In which mode should the file be opened to store the data? (Statement 1) 1
 2. Write the function to add the heading in to the list data. (Statement 2) 1
 3. Write the list object to store the user input values. (Statement 3) 1
 4. Write the writer object to write the rows into the csv file. (Statement 4) 1
35. Indian School in Delhi is starting up the network between its different wings. There are four buildings names SENIOR, JUNIOR, ADMIN and HOSTEL as shown below.



The distance between various buildings is as follows.

ADMIN to SENIOR	180m
ADMIN to JUNIOR	120m
ADMIN to HOSTEL	45m
SENIOR to JUNIOR	225m
SENIOR to HOSTEL	300m
JUNIOR to HOSTEL	250m

Number of Computers in each building are

SENIOR	120
JUNIOR	60
ADMIN	150
HOSTEL	50

- (a) Suggest the cable layout for connections between the buildings. 1
- (b) Suggest the most suitable place to house the server of this school. 1
- (c) Suggest the placement of the following devices with justification. 1
- (i) Hub/Switch
 - (ii) Repeater
- 1
- (d) The organization has their head office at Mumbai which is more than 1200km from the school region. Which of the following types of network will be used to connect both offices?
- (i) LAN
 - (ii) MAN
 - (iii) WAN
 - (iv) PAN

**CENTRE FOR ADVANCEMENT OF STANDARDS IN EXAMINATIONS
(GEMS ASIAN SCHOOLS)
COMMON REHEARSAL EXAMINATIONS 2024
(ALL INDIA SENIOR SCHOOL CERTIFICATE EXAMINATION)**

COMPUTER SCIENCE-PYTHON (Code: 083)

Maximum Marks: 70

Time: 3 hours

General Instructions:

- Please check this question paper contains 35 questions.
- The paper is divided into 4 Sections- A, B, C, D and E.
- Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
- Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.

SECTION A

1. State whether the following statement is **True** or **False**. 1
'except' block is a place that contains any code that must execute, whether the 'try' block raised an exception or not.
2. In RDBMS referential integrity can be specified with the help of _____ 1
(a) Primary key
(b) Alternate key
(c) Composite key
(d) Foreign key
3. Consider the following expression: 1
$$5*2-5//9+2.0+bool(100)$$

Which of the following will be the correct output if the expression is evaluated?
(a) 11.0
(b) 13.0
(c) False
(d) True
4. Select the correct output of the code: 1

```
L1, L2 = [10, 23, 36, 45, 78], []  
for i in range(len(L1)) :  
    L2.insert(i, L1.pop() )  
print( L1, L2, sep='@')
```

- (a) [78, 45, 36, 23, 10] @ []
 (b) [10, 23, 36, 45, 78] @ [78, 45, 36, 23, 10]
 (c) [10, 23, 36, 45, 78] @ [10, 23, 36, 45, 78]
 (d) [] @ [78, 45, 36, 23, 10]
5. Identify the wrong statement about UPDATE command 1
 (a) If WHERE clause is missing all the record in table will be updated
 (b) Only one record can be updated at a time using WHERE clause
 (c) Multiple records can be updated at a time using WHERE clause
 (d) Update is a DML command
6. Vinod is working as a manager in ABC Ltd. He wants to install CCTV Camera in every part of the multistorey building of his office. Select the best wired media to connect each CCTV camera. 1
 (a) Twisted Pair
 (b) Co-axial Cable
 (c) Fiber Optical
 (d) Electric Wire
7. Which of the following is a wrong dictionary declaration? 1
 (a) d={"mon":1,"tue":2,"wed":3}
 (b) d= {1 : "mon", 2 : "tue",3 : "wed"}
 (c) d= {[1,2] : "hello"}
 (d) d= {(1,2) : "hello"}
8. Write the output of the following Python statements: 1

```
x=5
def fun():
    X=3
    global x
    x=x+1
    print(x)
    print(X)
fun()
```

(a) 6 (b) 3 (c) Error (d) 6
 6 6 3

9. What will be the output of the following code snippet? 1

```
a=[0,1,2,3]
for a[-1] in a:
    print(a[-1])
```

(a) 0 1 2 3
 (b) 0 1 2 2
 (c) 3 3 3 3
 (d) 0 2 2 2

10. What possible output(s) is/are expected to be displayed on the screen at the time of execution of the program from the following code ? 1

```
import random
TEXT="CBSEONLINE"
COUNT=random.randint(0,3)
C=9
while TEXT[C]!='L':
    print (TEXT[C] + TEXT[COUNT] + "*",end=" ")
    COUNT=COUNT+1
    C=C-1
```

- (a) EC*NB*IS*
- (b) NS*IE*LO*
- (c) ES*NE*IO*
- (d) LE*NO*ON*

11. _____ is the networking device that connects computers in a network by using packet switching to receive, and forward data to the destination. 1

- (a) switch
- (b) Router
- (c) Bridge
- (d) RJ 45

12. Predict the output: 1

```
def check(T):
    new=""
    global S
    S='Python3.10'
    for i in 'PYTHON3.10':
        new=i+new
    print(new)
```

S="Python"

check(S)

- (a) Python3.10
- (b) 01.3NOHTYP
- (c) PYTHON3.10
- (d) 01.3nohtyP

13. What would be the output of 1

```
>>> "composite".partition("o")
```

14. Select the correct SQL statement from below to find the temperature in increasing order of all cities. 1

(a) SELECT city FROM weather order by temperature ;
(b) SELECT city, temperature FROM weather ;
(c) SELECT city, temperature FROM weather ORDER BY temperature ;
(d) SELECT city, temperature FROM weather ORDER BY city ;

15. _____ is a unique address that can be used to uniquely identify each node in a network. 1

16. Select the correct statement about seek() for the following code. 1

Fp.seek(5,1)

a) Moves the file pointer five character ahead from the current position
b) Moves the file pointer five character ahead from the beginning of a file
c) Moves file pointer five character behind from the current position.
d) Moves file pointer five character behind ahead from the end of a file.

Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choices as

(a) Both A and R are True, and R is the correct explanation for A
(b) Both A and R are True, and R is not the correct explanation for A
(c) A is True but R is False
(d) A is False but R is True

17. **Assertion (A):-** The readlines() method in python reads all lines from a text file. 1
Reasoning (R):- The readlines() method returns a list of lines(string).

18. **Assertion (A):** The programming expression int('12.5') results in error. 1
Reasoning(R): The literal value for int() with base 10: '12.5' is valid.

SECTION B

19. (i) Identify the protocols. 1+1=2

(a) Milan is working as a Tech Support Engineer and sometimes he wants to work on Client's computer from his office. Identify the traditional protocol used for this purpose?
(b) A standardized communication protocol used for sending and relaying email messages between email clients, email servers, and other email-related software applications.

- (ii) Give one difference between 3G and 4G technology.

OR

- (i) Give one difference between switch and hub.
(ii) Write one characteristic of Wi-Fi.

20. Rewrite the code and underline each correction made after removing all syntax errors. Also, predict the output. 2

```
element = 50
define display(Me):
    Global element
    element = 100
    while Me>10:
        if Me%7==0
        element = element+ Me
        else:
            element = element- Me
        Me=Me-6
        print(element, end="#")

display(20)
print(element)
```

21. Write a function charcount(S) in Python, that takes a string S as an argument and displays the frequency of each character in a dictionary. 2

For example:

Sample string S='chandrayaan.2023'

Expected result: {'c':1,'h':1,'a':4,'n':2,'d':1,'r':1,'y':1,'.':1,'2':2,'0':1,'3':1}

OR

Write a function concat() that takes a list N of flower names as parameter. The function should return the first letter of each name combined as a string.

Example:

N= ['Rose', 'Lily', 'Lotus']

The function should return 'RLL'

22. Predict the output. 2

```
import math
def f(x):
    if x<=0:
        raise ValueError('f:argument must me greater than zero')
    return math.sqrt(x)+2
def g(x):
    y=f(x)
    print (y>2)
try:
    g(1)
    g(-1)
except Exception:
    print ('Exception')
finally:
    print('Done!')
```

23. Write a function in python to display a two-dimensional list, with each row content in reverse order. 2

For example:

```
L=[['Arun','Peter','Ankana'],['Raman','Tara','Yogesh'],['Sumesh','Mercy','Stalan']]
```

The output should be:

```
[['Ankana','Peter','Arun'],['Yogesh','Tara','Raman'],['Stalan','Mercy','Sumesh']]
```

OR

Write a function in python that accepts a list and its size as arguments and swaps the element of every even location with its following odd location.

For Example: if a list of 9 elements initially contains the elements as

2,4,1,6,5,7,9,23,10

Then the function should rearrange the list as

4,2,6,1,7,5,23,9,10

24. Mr.Manoj has just created a table named "Book" containing columns 2

Bcode,Bname,Author and Price

After creating the table, he realized that he had forgotten to add a column in the table. Help him in writing an SQL command to add a column booktype of datatype string.

Thereafter, write the command to insert the following record in the table:

Bcode- B101

Bname- 'Computer Science with Python'

Author: 'Sumita Arora'

Price:350

Booktype:'Eduaction'

OR

Amrith is working in a database named STORE, in which she has created a table named "Product" containing columns PNo, PName, Qty(Quantity), Pdate(Purchase date) and Pprice(Product price) and inserted 5 records.

She wants to know the total price of each product. Help her to write the SQL query to display the total as "TOTAL_PRICE"

25. Predict the output of the following python code.

2

```
def Update(str1):
    length=len(str1)
    temp=""
    for i in range(0, length):
        if str1[i].islower():
            temp=temp+str1[i].upper()
        elif str1[i].isupper():
            temp=temp+str1[i].lower()
        elif str1[i].isdigit():
            temp=temp+str(int(str1[i])+1)
        else:
            temp=temp+'#'
    print(temp)
Update("CBSE-2024")
```

SECTION C

26. Predict the output of the python code given below:

3

```
def rain():
    f=open("com.txt","w+")
    f.write("The day is going to be rainy\n")
    f.write("rainy day is enjoyable\n")
    f.seek(0)
    x=f.readline()
    while x:
        l=x.split()
        for j in l:
            if j=="rainy":
                for k in range(-1,-(len(j)+1),-1):
                    print(j[k],end="")
                print(" ",end="")
            else:
                print(j+" ",end="")
        print()
        x=f.readline()
    f.close()
rain()
```

27. Consider the table SPORTS given below and write the output of the SQL queries that follow. 3

SPORTS

SID	NAME	TYPE	CHARGE	INSTRUCTOR
C0001	RAHUL	INDOOR	200	MR. ANIL
F0001	RAMESH	OUTDOOR	300	MR. BIJU
T0001	SALIHA	INDOOR	400	MR. ANIL
F0002	SIMRAN	NULL	100	MRS. SUSAN

- (i) SELECT DISTINCT INSTRUCTOR FROM SPORTS;
- (ii) SELECT NAME, INSTRUCTOR, CHARGE+100 FROM SPORTS
WHERE CHARGE BETWEEN 200 AND 400;
- (iii) SELECT INSTRUCTOR, SUM(CHARGE) FROM SPORTS GROUP BY
INSTRUCTOR HAVING INSTRUCTOR LIKE "%I%";
28. Write a method COUNTBELLS() in Python to read lines from text file 'CAROL.TXT' and display how many times the word 'bells' appear in the file. 3
Example: If the file content is as follows:

Jingle bells jingle bells jingle all the way
Oh, what fun it's to ride on a one horse open sleigh
Hey jingle bells jingle bells jingle all the way
Oh, what fun it's to ride on a one horse open sleigh

The COUNTBELLS() function should display the output as:
The word bells appears 4 times in the file.

OR

Write a function VowelCount() in Python, which should read each character of a text file "TESTFILE.TXT" and then count and display the count of occurrence of vowels (including upper case and lower cases).

Example: If the file content is as follows:

Be happy for no reason like a child
Always be happy

The VowelCount() function should display the output as:
The number of vowels:15

29. Consider the table given below and write SQL queries for question(a) to (c)

3

Table: COACHING

ID	NAME	AGE	CITY	FEE	PHONE
P1	SAMEER	34	DELHI	45000	9811076656
P2	ARYAN	35	MUMBAI	54000	9911343989
P4	RAM	34	CHENNAI	45000	9810593578
P6	PREMLATA	36	BHOPAL	60000	9910139987
P7	SHIKHA	36	INDORE	34000	9912139456
P8	RADHA	33	DELHI	23000	8110668888

- Write a query to display name in descending order whose age is more than 33.
- Write a query to increase the fees by 1000 for ID P2 and P7
- Write a query to display age wise average fee.

30.. A list NAMES contains the list of names of programming languages. Write user defined functions to perform given operations on the stack named 'stacking':

3

- Push_element() - To Push each name which does not have a vowel into stacking
- Pop_element() - To Pop the names from the stack and display them.

Also, display "Stack Empty" when there are no elements in the stack.
For example if NAMES = ["C++", "Python", "JSP", "HTML", "C", "Java"] then the output should be:

Popped name: C
Popped name: HTML
Popped name: JSP
Popped name: C++
Stack empty

SECTION D

- 31 Consider the tables TRAINER and COURSE given below.

4

Write SQL queries for the following:

TRAINER

TID	TNAME	CITY	HIREDATE	SALARY
101	Ritu	Nagpur	1998-10-15	56700
102	Navin	Goa	1994-12-24	80000
103	Murugan	Chandigarh	2001-12-21	82000
104	Jyothi	Guwahati	2002-12-25	68000
105	Chanu	Mumbai	1996-01-12	95000

COURSE

CID	CNAME	FEES	STARTDATE	TID
C201	Deepa	12000	2018-07-02	101
C202	Sindhu	15000	2018-07-15	103
C203	Neeraj	10000	2018-10-01	102
C204	Prakash	9000	2018-09-15	104
C205	Nikhat	20000	2018-08-01	101

- (i) Display Trainer name, city and salary in descending order of their hiredate.
- (ii) To display Trainer name and city of trainers who joined in the month of December.
- (iii) To display Trainer id, Trainer name, cname and startdate for trainer id 101.
- (iv) To count the number of trainers in each city. Print city and the number

32. A csv file called "drink.csv" is containing the following fields:

4

Dcode,Dname,Dprice

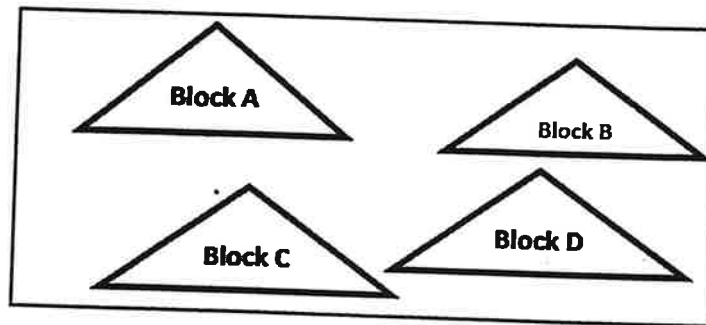
Write functions in python to perform the following:

- (i) `dwrite()` to write records onto csv file "drink.csv".
- (ii) `dread()` to read the contents from csv file and display them on the screen where DNAME has value "cool drinks".

SECTION E

33. A software organization has to set up its new data center in Chennai. It has four blocks of buildings – A, B, C and D.

1*5=5



Distance Between Blocks

Block A to Block B	50m
Block B to Block C	150m
Block C to Block D	25m
Block A to Block D	170m
Block B to Block D	125m
Block A to Block C	90m

No. of Computers

Block A	25
Block B	50
Block C	125
Block D	10

- (i) Suggest a cable layout of connection between the blocks (Diagram).
 (ii) Suggest the most suitable block to host the server along with the reason.
 (iii) Where would you place repeaters? Answer with justification.
 (iv) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible, suggest an economic way to connect it with reasonably high speed.
 (v) Suggest the placement of Hub/Switch with justification?
34. (i) Differentiate between seek() and tell() functions in files.
 (ii) A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage).

2+3

(a) Write a function addrec() in Python that would add contents of to the file "STUDENT.DAT"

(b) Write a function countrec() display the details of those students whose percentage is above 75. Also display number of students.

OR

(i) Name the functions used for serialization and deserialization of data in a binary file.

(ii) Consider the following definition function show(), write a method in python to search and display the content in a Binary file staff.dat, where Staffcode is matching with 'S0105'.

```
def Show(s):
    print(s["Staffcode"],s["Name"])
```

35. (i) Explain one difference between the datatypes char and varchar in SQL
 (ii) Nimisha has created a table named Doctor in MYSQL database, HOSPITAL:

- Did(Doctor id)- integer
- Dname(Doctor Name) - string
- DOJ (Date of joining) - Date
- Dept -(Department) string

Note the following to establish connectivity between Python and MySQL:

- Username - root
- Password - tiger
- Host - localhost

Nimisha now wants to display the number of doctors in each department. Help Nimisha to write the program in Python.

OR

- (i) Differentiate between fetchmany() and fetchall().
 (ii) Suraj wants to write a program in Python to insert the following record in the table named Employee in MYSQL database, COMPANY:

- Eno(Employee number)- integer
- Ename(Employee Name) - string
- DOB(Date of birth) - Date
- Salary - float

Note the following to establish connectivity between Python and MySQL:

- Username - root
- Password - tiger
- Host - localhost

The values of fields have to be accepted from the user. Help Suraj to write the program in Python. Also, delete the employee with the Eno:114 from the table Employee.