



तत् त्वं पूषन् अपावृणु  
केन्द्रीय विद्यालय संगठन

केन्द्रीय विद्यालय संगठन

(जम्मू संभाग)

**KENDRIYA VIDYALAYA SANGATHAN**

**(JAMMU REGION)**

**SAMPLE PAPER**

**FOR CLASS XII**

**COMPUTER SCIENCE (083)**

क्षेत्रीय कार्यालय, जम्मू, नज़दीक राजकीय चिकित्सालय, गाँधी नगर

जम्मू-180004

**REGIONAL OFFICE, JAMMU, NEAR GOVT. HOSPITAL,**

**GANDHI NAGAR, JAMMU-180004**

KENDRIYA VIDYALAYA SANGHATHAN, JAMMU REGION  
SAMPLE PAPER SET 1

CLASS-XII

SUBJECT: COMPUTER SCIENCE

TIME: 3 HOURS

M.M.: 70

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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

<b>Section A</b>		
1	Write full form of CSV.	1
2	Which is valid keyword? a. Int b. WHILE c.While d.if	1
3	Which of the following is not a valid identifier name in Python? a) 5Total b) _Radius c) pie d)While	1
4	Consider the following expression: 51+4-3**3//19-3 Which of the following will be the correct output if the expression is evaluated? a. 50 b. 51 c. 52 d. 53	1
5	Select the correct output of the code: Str="Computer" Str=Str[-4:] print(Str*2) a. uter b. uterretu c. uteruter d. None of these	1
6	Which module is imported for working with CSV files in Python? a. csv b. python-csv connector c. CSV d. python.csvconnector	1
7	Fill in the blank: _____ command is used to update records in the MySQL table. (a) ALTER (b) UPDATE (c) MODIFY (d) SELECT	1
8	Which command used to fetch rows from the table in database? (a) BRING (b) FETCH (c) GET (d) SELECT	1
9	Which of the following statement(s) would give an error after executing the following code? print(9/2)                   # Statement-1 print(9//2)                 # Statement-2	1

	<pre>print(9%%2)      # Statement-3 print(9%2)      # Statement-4</pre> <p>(a) Statement-1   (b) Statement-2   (c) Statement-3   (d) Statement-4</p>	
10	<p>Fill in the blanks:  _____ is the table constraint used to stop null values to be entered in the field.</p> <p>(i) Unique  (ii) Not NULL  (iii) Not Empty  (iv) None</p>	1
11	<p>The correct syntax of read() function from text files is:</p> <p>a. file_object.read()  b. file_object(read)  c. read(file_object)  d. file_object().read</p>	1
12	<p>Fill in the blank:  In SQL, we use _____ command to display the list of databases in the server.</p> <p>(a) SELECT DATABASES;  (b) SELECT DATABASE;  (c) SHOW DATABASES;  (d) DESC;</p>	1
13	<p>Fill in the blank:  _____ protocol is used to send mail.</p> <p>(a) SMTP   (b) FTP   (c) POP   (d) HTTPS</p>	1
14	<p>What will the following expression be evaluated to in Python?  10*1*2**4-4//4</p>	1
15	<p>Which function is used to display the maximum of records from table in a database?  (a) MAX   (b) MAXIMUM   (c) LARGEST   (d) GREAT</p>	1
16	<p>To establish a connection with MySQL from Python which of the following functions is used?  (a) connection()   (b) connect()   (c) open()   (d) cursor()</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as:</p> <p>(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</p>	
17	<p>Assertion (A): Global variable is declared outside the all the functions.  Reasoning (R): It is accessible through out all the functions.</p>	1
18	<p>Assertion (A): Binary files store all data in text format.  Reasoning (R): Binary files data remain in its original type.</p>	1
	<b>Section B</b>	
19	<p>Rajat has written the following Python code. There are some errors in it. Rewrite the correct code and underline the corrections made.</p> <pre>DEF execmain():     x = input("Enter a number:")     if (abs(x)=x):         print ("You entered a positive number") else:</pre>	2

	<pre>x=-1 print "Number made positive:"x execmain()</pre>	
20	<p>Write two advantages of star topology and bus topology each.</p> <p style="text-align: center;">OR</p> <p>Briefly explain HTML and HTTP.</p>	2
21	<p><b>a.</b> Find output generated by the following code:  <pre>mystr = "Hello I am a Human." print(mystr[::-3])</pre></p> <p><b>b.</b> Write the output of the code given below:  <pre>p=10 q=20 p*=q//3 p=q**2 q+=p print(p,q)</pre></p>	1+1
22	Differentiate between DDL and DML with one Example each.	2
23	<p>a. Give the full form of the following:</p> <ol style="list-style-type: none"> <li>i. URL</li> <li>ii. FTP</li> </ol> <p>b. What is the use of HTTP?</p>	2
24	<p>Predict the output of the following code:</p> <pre>def CALLME(n1=1,n2=2):     n1=n1*n2     n2+=2     print(n1,n2) CALLME() CALLME(3)</pre> <p style="text-align: center;">OR</p> <pre>mylist = [2,14,54,22,17] tup = tuple(mylist) for i in tup:     print(i%3, end=",")</pre>	2
25	<p>Answer the following :</p> <ol style="list-style-type: none"> <li>i) Name the package imported for connecting Python with MySQL database.</li> <li>ii) What is the purpose of cursor object?</li> </ol> <p style="text-align: center;">OR</p> <p>What is primary key in MySQL database? Give an example.</p>	2
Section-C		

26

a. Consider the following tables Trainer and Course:

1+2

**TRAINER**

TID	TNAME	CITY	HIREDATE	SALARY
101	SUNAINA	MUMBAI	1998-10-15	90000
102	ANAMIKA	DELHI	1994-12-24	80000
103	DEEPTI	CHANDIGARG	2001-12-21	82000
104	MEENAKSHI	DELHI	2002-12-25	78000
105	RICHA	MUMBAI	1996-01-12	95000
106	MANIPRABHA	CHENNAI	2001-12-12	69000

**COURSE**

CID	CNAME	FEES	STARTDATE	TID
C201	AGDCA	12000	2018-07-02	101
C202	ADCA	15000	2018-07-15	103
C203	DCA	10000	2018-10-01	102
C204	DDTP	9000	2018-09-15	104
C205	DHN	20000	2018-08-01	101
C206	O LEVEL	18000	2018-07-25	105

What will be the output of the following statement?

SELECT \* FROM TRAINER NATURAL JOIN COURSE;

b. Write the Outputs of the MySQL queries (i) to (iv) based on the given above tables:

i. SELECT DISTINCT(CITY) FROM TRAINER WHERE SALARY&gt;80000;

ii. SELECT TID, COUNT(\*), MAX(FEES) FROM COURSE GROUP BY TID  
HAVING COUNT(\*)>1;iii. SELECT T.TNAME, C.CNAME FROM TRAINER T, COURSE C WHERE  
T.TID=C.TID AND T.FEES<10000;

iv. SELECT COUNT(CITY),CITY FROM TRAINER GROUP BY CITY;

27

Write a method/function COUNTLINES\_ET() in python to read lines from a text file REPORT.TXT, and COUNT those lines which are starting either with 'E' or starting with 'T' and display the Total count separately.

For example:

If REPORT.TXT consists of

*"ENTRY LEVEL OF PROGRAMMING CAN BE LEARNED FROM PYTHON. ALSO, IT IS VERY FLEXIBLE LANGUGAE. THIS WILL BE USEFUL FOR VARIETY OF USERS."*

Then, Output will be:

No. of Lines with E: 1

No. of Lines with T: 1

OR

Write a method/ function SHOW\_TODO() in python to read contents from a text file ABC.TXT and display those lines which have occurrence of the word "TO" or "DO".

For example :

If the content of the file is

*"THIS IS IMPORTANT TO NOTE THAT  
SUCCESS IS THE RESULT OF HARD WORK.  
WE ALL ARE EXPECTED TO DO HARD WORK.  
AFTER ALL EXPERIENCE COMES FROM HARDWORK."*

The method/function should display:

3

THIS IS IMPORTANT TO NOTE THAT  
WE ALL ARE EXPECTED TO DO HARD WORK.

28

a. Write the outputs of the SQL queries (i) to (iv) 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	Shalakra	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;
- ii. SELECT Max(Date\_of\_Join),Min(Date\_of\_Join) FROM Teacher;
- iii. SELECT Teacher.name,Teacher.Department, Posting.Place FROM Teacher, Posting WHERE Teacher.Department = Posting.Department AND Posting.Place="Delhi";
- iv. SELECT Gender, COUNT(Gender) FROM Teacher GROUP BY Gender;

b. Write the command to view the schema of the table Teacher.

29

Python function oddeve(L) to print positive numbers in a list L.

Example:

Input: [4, -1, 5, 9, -6, 2, -9, 8]

Output: [4, 5, 9, 2, 8]

3

30

Write a function AddCustomer(Customer) in Python to add a new Customer information into the stack (list) CStack and display the information.

OR

Write a function DeleteCustomer() to delete a Customer information from a list of CStack. The function delete the name of customer from the stack.

Example: If the stack contains ["Abhinav","Vimank"],

the output should be:

Vimank

Abhinav

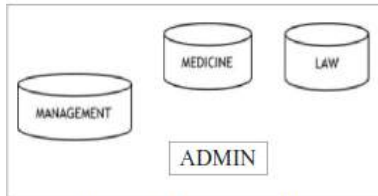
3

Section-D

31

Prithvi Training Institute is planning to set up its centre in Jaipur with four specialized blocks for Medicine, Management, Law courses along with an Admission block in separate buildings. The physical distances between these blocks and the number of computers to be installed in these blocks are given below. You as a network expert have to answer the queries raised by their board of directors as given in (i) to (v).

5



Shortest distances between various locations in meters:

Admin Block to Management Block	60
Admin Block to Medicine Block	40
Admin Block to Law Block	60
Management Block to Medicine Block	50
Management Block to Law Block	110
Law Block to Medicine Block	40

Number of Computers installed at various locations are as follows:

Admin Block	150
Management Block	70
Medicine Block	20
Law Block	50

- i. Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
- ii. Suggest by drawing the best cable layout for effective network connectivity of the blocks having server with all the other blocks.
- iii. Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following:  
Modem, Switch, Gateway, Router
- iv. Suggest the most suitable wired medium for efficiently connecting each computer installed in every building out of the following network cables:  
Coaxial Cable, Ethernet Cable, Single Pair, Telephone Cable
- v. Suggest the type of network implemented here.

32

(a) Write the output of following python code:

2+3

```
def result(s):
    n = len(s)
    m=""
    for i in range(0, n):
        if (s[i] >= 'a' and s[i] <= 'm'):
            m = m + s[i].upper()
        elif (s[i] >= 'n' and s[i] <= 'z'):
            m = m + s[i-1]
        elif (s[i].isupper()):
            m = m + s[i].lower()
        else:
            m = m + '#'
    print(m)
result('Cricket')
```

	<p>(b) Avni is trying to connect Python with MySQL for her project. Help her to write the python statement on the following:</p> <ol style="list-style-type: none"> <li>Name the library, which should be imported to connect MySQL with Python.</li> <li>Name the function, used to run SQL query in Python.</li> <li>Write Python statement of connect function having the arguments values as :  Host name :192.168.11.111  User : root  Password: Admin  Database : MYPROJECT</li> </ol> <p style="text-align: center;">OR</p> <p>(a) Find the output</p> <pre> Msg1="WeLcOME" Msg2="GUeSTs" Msg3="" for I in range(0,len(Msg2)+1):     if Msg1[I]&gt;="A" and Msg1[I]&lt;="M":         Msg3=Msg3+Msg1[I]     elif Msg1[I]&gt;="N" and Msg1[I]&lt;="Z":         Msg3=Msg3+Msg2[I]     else:         Msg3=Msg3+"*" print(Msg3) </pre> <p>b) Your friend Jagdish is writing a code to fetch data from a database Shop and table name Products using Python. He has written incomplete code. You have to help him write complete code:</p> <pre> import _____ as m # Statement-1 object1 = m.connect(     host="localhost",     user="root",     password="root",     database="Shop" ) object2 = object1._____ # Statement-2 query = "SELECT * FROM Products WHERE NAME LIKE "A%";" object2._____(query) # Statement-3 object1.close() </pre>	
33	<p>What is the advantage of using pickle module?</p> <p>Write a program to write into a CSV file "one.csv" Rollno, Name and Marks separated by comma. It should have header row and then take input from the user for all following rows. The format of the file should be as shown if user enters 2 records.</p> <pre> Roll.No,Name,Marks 20,Ronit,67 56,Nihir,69 </pre> <p style="text-align: center;">OR</p> <p>What is difference between tell() and seek() methods?</p> <p>Write a program to read all content of "student.csv" and display records of only those students who scored more than 80 marks. Records stored in students is in format : [Rollno, Name, Marks]</p>	2+3



34	<p>ABC Gym has created a table TRAINER. Observe the table given below and answer the following questions accordingly.</p> <p>Given the Table TRAINER</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">TID</th> <th style="width: 25%;">TNAME</th> <th style="width: 20%;">CITY</th> <th style="width: 20%;">HIREDATE</th> <th style="width: 25%;">SALARY</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>SUNAINA</td> <td>MUMBAI</td> <td>1998-10-15</td> <td>90000</td> </tr> <tr> <td>102</td> <td>ANAMIKA</td> <td>DELHI</td> <td>1994-12-24</td> <td>80000</td> </tr> <tr> <td>103</td> <td>DEEPTI</td> <td>CHANDIGARH</td> <td>2001-12-21</td> <td>82000</td> </tr> <tr> <td>104</td> <td>MEENAKSHI</td> <td>DELHI</td> <td>2002-12-25</td> <td>78000</td> </tr> <tr> <td>105</td> <td>RICHA</td> <td>MUMBAI</td> <td>1996-01-12</td> <td>95000</td> </tr> <tr> <td>106</td> <td>MANIPRABHA</td> <td>CHENNAI</td> <td>2001-12-12</td> <td>69000</td> </tr> </tbody> </table> <p>a. What is Degree and Cardinality of the above table?  b. Which field should be made as the primary key? Justify your answer.  c. Write the query to:  i. Insert a record: (107,Bhoomi,Delhi,2001-12-15,90000)  ii. Increase the salary by 1% for the trainers whose salary is more than 80000</p> <p style="text-align: center;">OR</p> <p>i. Delete the record of Richa  ii. Add a new column remarks of VARCHAR type with 50 characters.</p>	TID	TNAME	CITY	HIREDATE	SALARY	101	SUNAINA	MUMBAI	1998-10-15	90000	102	ANAMIKA	DELHI	1994-12-24	80000	103	DEEPTI	CHANDIGARH	2001-12-21	82000	104	MEENAKSHI	DELHI	2002-12-25	78000	105	RICHA	MUMBAI	1996-01-12	95000	106	MANIPRABHA	CHENNAI	2001-12-12	69000	1+1 +2
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Section E

35	<p>Priti of class 12 is writing a program to create a CSV file “emp.csv”. She has written the following code to read the content of file emp.csv and display the employee record whose name begins from “S” also show no. of employee with first letter “S” out of total record. As a programmer, help her to successfully execute the given task.</p> <p>Consider the following CSV file (emp.csv):</p> <pre>1,Peter,3500 2,Scott,4000 3,Harry,5000 4,Michael,2500 5,Sam,4200</pre> <pre>import _____ # Line-1 def snames():     with open(_____) as csvfile: # Line-2         myreader = csv.____ (csvfile, delimiter=",") # Line-3         count_rec=0         count_s=0         for row in myreader:             if row[1][0].lower() == "s":                 print(row[0],",",row[1],",",row[2])                 count_s += 1                 count_rec += 1         print(count_rec, count_s)</pre>	1+1 +2
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	<ol style="list-style-type: none"><li>i. What should be written in Line-1?</li><li>ii. In which mode should Priti open the file to print the data?</li><li>iii. What should be written in Line-2 and Line-3?</li></ol>	
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## KENDRIYA VIDYALAYA SANGHATHAN, JAMMU REGION

## SAMPLE PAPER SET 2

CLASS-XII

SUBJECT: COMPUTER SCIENCE

TIME: 3 HOURS

M.M.: 70

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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

SECTION A		
1	State True or False "The characters of string will have two-way indexing."	1
2	Which of the following is the valid variable name? (a) f%2 (b) 20ans (c) ans (d) \$ans	1
3	What will be the output of the following code? D1={1: "One",2: "Two", 3: "C"} D2={4: "Four",5: "Five"} D1.update(D2) print (D1) a) {4:'Four',5: 'Five'} b) Method update() doesn't exist for dictionary c) {1: "One",2: "Two", 3: "C"} d) {1: "One",2: "Two", 3: "C",4: 'Four',5: 'Five'}	1
4	Evaluate the expression given below if A=16 and B=15. A % B // A a) 1 b) 0.0 c) 0 d) 1.0	1
5	Select the correct output of the following code : s="I#N#F#O#R#M#A#T#I#C#S" L=list(s.split('#')) print(L) a) [I#N#F#O#R#M#A#T#I#C#S] b) ['I', 'N', 'F', 'O', 'R', 'M', 'A', 'T', 'I', 'C', 'S'] c) ['I N F O R M A T I C S'] d) ['INFORMATICS']	1
6	Which of the following are the modes of both writing and reading in binary format in file? a) wb+ b) w c) w+ d) wb	1
7	Fill in the blank _____ command is used to modify the attribute datatype or size in a table structure. a) update b) alter c) insert d) None of these	1
8	Which of the following clause is used to sort records in a table? a) GROUP	1

	<p>b) GROUP BY c) ORDER BY d) ORDER</p>	
9	<p>Which of the following statement(s) would give an error after executing the following code?  str= "Python Programming" #statement 1  x= '2' #statement 2  print(str*2) #statement 3  print(str*x) #statement 4</p> <p>a) statement 1 b) statement 2 c) statement 3 d) statement 4</p>	1
10	<p>Fill in the blank:  _____ constraint is used to restrict entries in other table's non key attribute, whose values are not existing in the primary key of reference table..</p> <p>a) Primary Key b) Foreign Key c) Candidate Key d) Alternate Key</p>	1
11	<p>A text file student.txt is stored in the storage device. Identify the correct option out of the following options to open the file in read mode.</p> <p>i. myfile = open('student.txt','rb')  ii. myfile = open('student.txt','w')  iii. myfile = open('student.txt','r')  iv. myfile = open('student.txt')</p> <p>a) only i b) both i and iv c) both iii and iv d) both i and iii</p>	1
12	<p>Fill in the blank:  _____ define rules regarding the values allowed in columns and is the standard mechanism for enforcing database integrity.</p> <p>a) Attribute b) Constraint c) Index d) Commit</p>	1
13	<p>Fill in the Blank  _____ is the networking device that connects computers in a network by using packet switching to receive, and forward data to the destination.</p> <p>a) Switch    b) Hub    c) Repeater    d) Router</p>	1
14	<p>What will the following expression be evaluated to in Python?  print(6*3 / 4**2//5-8)</p> <p>(a) -10    (b) 8.0    (c) 10.0    (d) -8.0</p>	1
15	<p>The operation whose result contains all pairs of tuples from the two relations, regardless of whether their attribute values match.</p> <p>a) Join b) Intersection c) Union d) Cartesian Product</p>	1

16	To create a connection between MYSQL database and Python application connect() function is used. Which of the following are mandatory arguments required to connect any database from Python. a) Username, Password, Hostname, Database Name, Port b) Username, Password, Hostname c) Username, Password, Hostname, Database Name d) Username, Password, Hostname, Port	1
Q17 and 18 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 but R is False (d) A is false but R is True		
17	Assertion (A):- All the keyword arguments passed must match one of the arguments accepted by the function Reasoning (R):- You cannot change the order of appearance of the keyword.	1
18	Assertion (A): CSV file is a human readable text file where each line has a number of fields, separated by commas or some other delimiter. Reason (R): writerow() function can be used for writing into writer object.	1
<b>SECTION B</b>		
19	Raman has written a code to find its sum of digits of a given number passed as parameter to function sumdigits(n). His code is having errors. Rewrite the correct code and underline the corrections made. def sumdigits(n): d=0 for x in str(n): d=d+x return d n=int(input("Enter any number")) s=sumdigits(n) print("Sum of digits",s)	2
20	Write two points of difference between Switch and Router. OR Write two points of difference between Web Server and Web Browser.	2
21	(a) Given is a Python List declaration: list= [10, 20, 30, 40, 50, 60, 70, 80] print(list[ : 2]) (b) Write the output of the code given below: squares = {1: 1, 2: 4, 3: 9, 4: 16, 5: 25} print(squares.pop(4))	1  1
22	Explain the use of 'Primary Key' in a Relational Database Management System. Give example to support your answer.	2
23	(a) Write the full forms of the following: (i) POP3      (ii) TCP/IP (b) What is the use of VoIP?	2
24	Predict the output of following code: def fun(x): x[0] = 5 return x g = [10,11,12] print(fun(g),g)	2

OR

```
test_list = [5, 6, 7]
test_tup = (9, 10)
res = tuple(list(test_tup) + test_list)
print(str(res))
```

25 Differentiate between char and varchar in SQL with appropriate examples.  
 OR  
 What are different types of SQL Aggregate Functions? Give two examples.

**SECTION C**

26 (a) Consider the following tables – Uniform and Cost:

Uniform

UCODE	UNAME	UCOLOR
1	Shirt	White
2	Pant	Grey
3	Tie	Blue
4	Shocks	Blue

Cost

UCODE	SIZE	PRICE
1	L	580
1	M	600
2	L	800
2	M	810

What will be the output of the following statement?  
 SELECT \* FROM UNIFORM U JOIN COST C ON U.Ucode=C.Ucode;

(b) Write the output of the queries (i) to (iv) based on the table “Product”, showing details of products being sold in a grocery shop.

Pcode	Pname	Uprice	Manufacturer
P01	Washing Powder	120	Surf
P02	Toothpaste	54	Colgate
P03	Soap	25	Lux
P04	Toothpaste	65	Pepsodent
P05	Soap	38	Dove
P06	Shampoo	245	Dove

i) SELECT PName, Average (UPrice) FROM Product GROUP BY Pname;  
 ii) SELECT DISTINCT Manufacturer FROM Product;  
 iii) SELECT COUNT (DISTINCT PName) FROM Product;  
 iv) SELECT PName, MAX(UPrice), MIN(UPrice) FROM Product GROUP BY PName;

27 Write a function countwords() in Python that counts the number of words containing digits in it present in a text file “myfile.txt”.  
 Example: If the “myfile.txt” contents are as follows:  
 This is my 1st class on Computer Science. There are 100 years in a Century. Student1 is present in the front of the line.  
 The output of the function should be: 3  
 OR  
 Write a function countwords() in Python, which should count the occurrences of word ‘me’ and ‘my’ in the text file ‘myfile.txt’.

Example: If the "myfile.txt" contents are as follows:  
 "I will have nothing more to do with you and you are no longer **my** friend, no longer **my** 'faithful slave,' as you call yourself!  
 Keep the third piece of wisdom for your own use, and let **me** have the gold."  
 The output of the function should be: No of words 'my' is 2  
 No. of Words 'me' is 1

28 (a) Write the outputs of the SQL queries (i) to (iv) based on the relations Company and Customer given below:

COMPANY

CID	NAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	ROHAN	70000	20	222
102	DEEPAK	50000	10	555
103	MOHAN	30000	5	111
104	SAHIL	35000	3	333
105	NEHA	25000	7	444
106	SOHAN	20000	5	333
107	ARUN	50000	15	555

- i) SELECT COUNT(\*) , CITY FROM COMPANY GROUP BY CITY;
- ii) SELECT MIN(PRICE), MAX(PRICE) FROM CUSTOMER WHERE QTY>10;
- iii) SELECT PRODUCTNAME, CITY, PRICE FROM COMPANY, CUSTOMER WHERE COMPANY. CID=CUSTOMER.CID AND PRODUCTNAME= "MOBILE";
- iv) SELECT CUSTOMER.NAME, CITY, PRICE FROM COMPANY, CUSTOMER WHERE COMPANY. CID=CUSTOMER.CID AND PRICE>25000;

(b) Write command to show all the tables in a database.

29 Write a function listchange(Arr,n)in Python, which accepts a list Arr of numbers and n is an numeric value depicting length of the list. Modify the list so that all even numbers doubled and odd number multiply by 3  
 Sample Input Data of the list: Arr= [ 10,20,30,40,12,11], n=6  
 Output: Arr = [20,40,60,80,24,33]

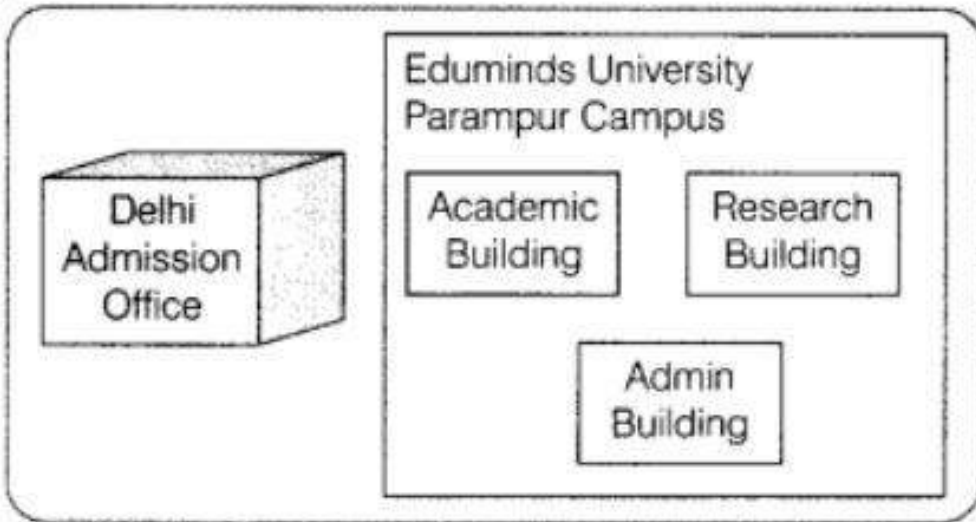
30 A list contains following record of a student: [Rno, Name, Dob, Class]  
 Write the following user defined functions to perform given operations on the stack named 'status':  
 (i) Push\_element() - To Push an record of student to the stack  
 (ii) Pop\_element() - To Pop the objects from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack.

OR

Write a function in Python, Push(book) where, book is a dictionary containing the details of a book in form of {bookno : price}.  
 The function should push the book in the stack which have price greater than 300. Also display the count of elements pushed into the stack.  
 For example:  
 If the dictionary contains the following data:  
 Dbook={"Python":350,"Hindi":200,"English":270,"Physics":600, "Chemistry":550}  
 The stack should contain  
 Chemistry  
 Physics  
 Python  
 The output should be:  
 The count of elements in the stack is 3

**SECTION D**

31 Eduminds University of India is starting its first campus in a small town Parampur of central India with its centre admission office in Delhi. The university has three major buildings comprising of Admin Building, Academic Building and Research Building in the 5 km area campus.  
 As a network expert, you need to suggest the network plan as per (a) to (e) to the authorities keeping in mind the distance and other given parameters.



Expected wire distances between various locations:

Research Building to Admin Building	90m
Research Lab to Academic Building	80m
Academic Building to Admin Building	15m
Delhi Admission Office to Parampur Campus	1450km



Expected number of computers to installed at various locations in the university are as follows:

Research Building	20
Academic Building	150
Admin Building	35
Delhi Admission Office	5

- Suggest the authorities, the cable layout amongst various blocks inside university campus for connecting the buildings
- Suggest the most suitable place (i.e. block) to house the server of this university with a suitable reason
- Suggest an efficient device from the following to be installed in each of the blocks to connect all the computers
- Suggest the placement of a Repeater (if any) in the network with justification.
- Suggest the most suitable (very high speed) service to provide data connectivity between Admission Building located in Delhi and the campus located in Parampur.

32

a) Write output of the following code:

```
value = 50
def display(N):
    global value
    value = 25
    if N%7==0:
        value = value + N
    else:
        value = value - N
print(value, end="#")
display(20)
print(value)
```

b) The code given below inserts the following record in the table Employee:

Empno – integer  
EName – string  
Desig – integer  
Salary – integer

Note the following to establish connectivity between Python and MYSQL:

- Username is root
- Password is Password
- The table exists in a MYSQL database named Bank.
- The details (Empno, Ename, Design and Salary) are to be accepted from the user.

Write the following missing statements to complete the code:

Statement 1 – to form the cursor object

Statement 2 – to query string.

Statement 3- to execute insert query for employee table

```
import mysql.connector
mydb=mysql.connector.connect(host='localhost',user='root',passwd='Password',database='bank')
mycursor=_____ # statement1
eno=int(input('enter Employee no'))
nm=input('enter Employee name')
d=input('enter Designation)
s=int(input('Enter salary'))
rtup=(eno,n,d,s)
```

2+3

	<pre> rq=""insert into Employee (Empno, Ename, Design,Salary) values (_____)"" #statement2 mycursor._____ #statement 3 mydb.commit() print("Data Added successfully"  OR  a) Predict the output of the following code: 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') </pre> <p>b) The code given below reads the following record from Table named Employee and display those record salary &gt;= 30000 and &lt;= 90000:</p> <p>Empno – integer  EName – string  Desig – integer  Salary – integer</p> <p>Note the following to establish connectivity between Python and MYSQL:</p> <ul style="list-style-type: none"> <li>• Username is root</li> <li>• Password is Password</li> <li>• The table exists in a MYSQL database named Bank.</li> </ul> <p>Write the following missing statements to complete the code:</p> <p>Statement 1 – to form the cursor object  Statement 2 – to query string.  Statement 3- to execute the query that extracts records of those Employees whose salary &gt;=30000 and &lt;=90000.</p> <pre> import mysql.connector mydb=mysql.connector.connect(host='localhost',user='root',passwd='Password',database='bank') mycursor=_____ # statement1 mycursor._____ #statement 2 data=_____ # statement 3 for x in data:     print(x) </pre>	
33	<p>What is the use of tell() function?</p> <p>Write a program in Python that defines and calls the following user defined functions:</p> <ol style="list-style-type: none"> <li>Add(): to add the record of a student to a csv file "record.csv". Each record should be with field elements [admno,sname,class]</li> <li>Count(): to count the number of students studying in class 12</li> </ol> <p style="text-align: center;">OR</p>	5

Give a difference between dump and load function. Write a program in Python that defines and calls the following user defined functions:

- i. Add(): to add the record of an animal to a csv file "animal.csv". Each record should be with field elements [animalname, animaltype, animalfood]
- ii. Search(): to print all the animal names who eat grass as their food.

**SECTION E**

34 Arjun creates a table Employee with a set of records to maintain their Inventory. After creation of table, he entered data of 7 employees in the table.

1+1+2

EMPNO	NAME	DEPT	SALARY
1021	Radhika	sales	5000
1022	Anu	dev	12000
1023	Rajesh	support	8000
1024	Arunag	dev	20000
1026	Manisha	sales	7000
1027	Disha	support	4000
1035	Sanjay	dev	34000

- (a) Identify the attribute best suitable to be declared as a primary key
- (b) If two columns and two rows are added what will be the degree and cardinality of the table Employee
- (c) i) Insert the following data into the attributes empID, empName and empDept respectively  
in the given table SUDENT empID = 1042, empName = "Abhinav" and empDept = "support"
- ii) Write a command display structure of table employee.  
OR
- (c) i) Write a command to add new column bonus to Employee Table  
ii) Write SQL statement to update the Bonus of all employees by 20% of salary.

35 Aditya is a Python programmer. He has written a code and created a binary file student.dat with rollno, name, class and marks. The file contains 10 records. He now has to search record based on rollno in the file student.dat

As a Python expert, help him to complete the following code based on the requirement given above:

```
import _____ #Statement 1
def searchrec():
    r=int(input('Enter roll no of student to be searched'))
    f=open(_____) # statement2
    found=False
    try:
        while True:
```

	<pre> data=_____ # statement 3 for rec in data:     if r==_____: # staement4         found=True         print('Name: ',rec[1])         print('Class : ',rec[2])         print('marks : ',rec[3])         break except Exception:     f.close() if found==True:     print('Search successful') else:     print('Record not exist') </pre> <p>(i) Which module should be imported in the program? (Statement1)</p> <p>(ii) Write the correct statement required to open a file student.dat in the required mode (Statement 2)</p> <p>(iii) Which statement should Aditya fill in Statement 3 for reading data from binary file student.dat. Also Write the correct comparison to check existence of record (Statement4).</p>	
		1
		1
		2

KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION  
SAMPLE PAPER SET 3

CLASS-XII

SUBJECT- COMPUTER SCIENCE

Time: 3 hours

MM: 70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each.
8. All programming questions are to be answered using Python Language only.

<b>SECTION – A</b>		
1.	Which of the following is not a valid identifier name in Python? a) First_Name b) _Area c) 2nd_num d) While	1
2.	Find the operator which cannot be used with a string in Python from the following:- a) // b) * c) + d) in	1
3.	Identify the valid declaration of Record: Record=(1342, "Pooja" , 45000, "Sales") a) List b) Tuple c) String d) Dictionary	1
4.	Which of the following expressions is an example of type casting? a) 4.0+float(6) b) 5.3+6.3 c) 5.0+3 d) None of these	1
5.	What will be the output of the following statements? a = [0, 1, 2, 3] del a[:] print(a) a) None b) [] c) [0, 1, 2, 3] d) NameError	1
6.	Which of the following command is used to open a file "c:\temp.txt" in read mode only? a) infile = open("c:\temp.txt", "r") b) infile = open("c:\\temp.txt", "r")	1

	<p>c) infile = open(file = "c:\temp.txt", "r+")  d) infile = open(file = "c:\\temp.txt", "r+")</p>	
7.	<p>Which command is used to add a new record in existing table in SQL</p> <p>a) insert into  b) alter table  c) add into  d) create table</p>	1
8.	<p>Which SQL command is used to delete an existing column from a table?</p> <p>a) update  b) delete  c) alter  d) order</p>	1
9.	<p>What will be the output after the following statements?</p> <pre>x = 27 y = 9 while x &lt; 30 and y &lt; 15:     x = x + 1     y = y + 1 print(x,y)</pre> <p>a) 26 11  b) 25 11  c) 30 12  d) 26 10</p>	1
10.	<p>Which of the following function is used to FIND the largest value from the given data in MYSQL?</p> <p>a) MAX()  b) MAXIMUM ()  c) LARGEST ()  d) BIG ()</p>	1
11.	<p>To print 4th line from text file, which of the following statement is true?</p> <p>a) dt = f.readlines()  print(dt[3])  b) dt=f.read(4)  print(dt[3])  c) dt=f.readline(4)  print(dt[3])  d) All of these</p>	1
12.	<p>What will be the order of the data being sorted after the execution of given query  SELECT * FROM STUDENT ORDER BY ROLL_NO;</p> <p>a) Custom Sort  b) Descending  c) Ascending  d) None of the above</p>	1
13.	<p>In specific, if the systems use separate protocols, which one of the following devices is used to link two systems?</p>	1

	<ul style="list-style-type: none"> <li>a) Repeater</li> <li>b) Gateway</li> <li>c) Bridge</li> <li>d) Hub</li> </ul>	
14.	<p>Consider the expression given below. The value of X is:  <math>X = 2 + 9 * ((3 * 12) - 8) / 10</math></p> <ul style="list-style-type: none"> <li>a) 30.0</li> <li>b) 27.2</li> <li>c) 28.4</li> <li>d) 30.8</li> </ul>	1
15.	<p>Consider the table with structure as: Student (ID, name, dept name, tot_cred)          In the above table, which attribute will form the primary key?</p> <ul style="list-style-type: none"> <li>a) Name</li> <li>b) Dept</li> <li>c) total_credits (</li> <li>d) ID</li> </ul>	1
16.	<p>To retrieve all the rows from the result set, which method is used?</p> <ul style="list-style-type: none"> <li>a) fetchall</li> <li>b) fetchone</li> <li>c) fetchmany</li> <li>d) none of the above</li> </ul>	1
<p><b>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</b></p> <ul style="list-style-type: none"> <li><b>a) Both A and R are true and R is the correct explanation for A</b></li> <li><b>b) Both A and R are true and R is not the correct explanation for A</b></li> <li><b>c) A is True but R is False</b></li> <li><b>d) A is false but R is True</b></li> </ul>		
17.	<p>Assertion (A): The math.pow(2,4) gives the output: 16.0          Reason (R): The math.pow() method receives two float arguments, raise the first to the second and return the result.</p>	1
18.	<p>Assertion (A): CSV stands for comma separated value.          Reason (R): CSV files are a common file format for transferring and storing data.</p>	1
<b>SECTION – B</b>		
19.	<p>Aman has write the code to find factorial of an integer number as follow. But he got some error while running this program. Kindly help him to correct the errors.</p> <pre> num=int(input("Enter any integer number")) fact=1 for x of range(num,1,-1)     if num=1 or num=0         print ("Fact=1")         break     else         fact=fact*x print(fact) </pre>	2

20.	<p>ABC Company wants to link its computers in Head office in New Delhi to its office in Sydney. Name the type of Network that will be formed. Which communication media should be used to form this Network?</p> <p style="text-align: center;"><b>OR</b></p> <p>Differentiate between communication using Optical Fiber and Ethernet Cable in context of wired medium of communication technologies.</p>	2										
21.	<p>a) Given a list: List1=[10,[20,30,40],50,60,70,80,90] What will be the output of print(List1[1:3:2])?</p> <p>b) Write the output of following code: Tup1=(10,15,20,25,30) print(Tup1[-1:0:-2])</p>	1  1										
22	What do you mean by Primary Key in a relation/table? Give a suitable example of primary key.	2										
23	<p>a) Which service/protocol will be most helpful to conduct live interactions from one location to different locations?</p> <p>b) Write full form of the following: i) FTP ii) HTTP</p>	1  1										
24	<p>Write the output of the following Python program code:</p> <pre>TXT = ["10","20","30","5"] CNT = 3 TOTAL = 0 for C in [7,5,4,6]:     T = TXT[CNT]     TOTAL = float (T) + C     print (TOTAL)     CNT-=1</pre> <p style="text-align: center;"><b>OR</b></p> <pre>def check(x,y):     if x != Y:         return x + 5     else:         return y +10 print(check(10,5))</pre>	2										
25	<p>What do you understand by ORDER BY in SQL? Explain the use of Where clause with SELECT.</p> <p style="text-align: center;"><b>OR</b></p> <p>What do you mean by degree and cardinality of table?</p>	2										
<b>Section-C</b>												
26	<p>a) <b>Table: EMPLOYEES</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Empid</th> <th style="width: 15%;">Firstname</th> <th style="width: 15%;">Lastname</th> <th style="width: 30%;">Address</th> <th style="width: 25%;">City</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Empid	Firstname	Lastname	Address	City						2+1
Empid	Firstname	Lastname	Address	City								



010	Ravi	Kumar	Raj nagar	GZB
105	Harry	Waltor	Gandhi nagar	GZB
152	Sam	Tones	33 Elm St.	Paris
215	Sarah	Ackerman	440 U.S. 110	Upton
244	Manila	Sengupta	24 Friends street	New Delhi
300	Robert	Samuel	9 Fifth Cross	Washington
335	Ritu	Tondon	Shastri Nagar	GZB
400	Rachel	Lee	121 Harrison St.	New York
441	Peter	Thompson	11 Red Road	Paris

**Table: EMPSALARY**

Empid	Salary	Benefits	Designation
010	75000	15000	Manager
105	65000	15000	Manager
152	80000	25000	Director
215	75000	12500	Manager
400	32000	7500	Salesman
441	28000	7500	salesman
501	18000	6500	Clerk

Give the **Output** of following SQL commands:

- (i) Select Employee.firstname, empsalary,salary from employees, empsalary where designation = 'Salesman' and Employees.empid=Empsalary.empid;
- (ii) Select count(distinct designation) from empsalary;
- (iii) Select designation, sum(salary) from empsalary group by designation having count(\*) >2;
- (iv) Select sum(benefits) from empsalary where designation ='Clerk';

b) Define Equi join with a suitable example

27	<p>Write a function readMe() which read a file 'data.txt' and print the frequency of the words 'India' in it.</p> <p style="text-align: center;"><b>OR</b></p> <p>Write a function linecount() in python which read a file 'data.txt' and count number of lines starts with character 'P'.</p>	3																																																	
28	<p>Write SQL commands for (a) to (d) and write output for (e) to (f) on the basis of TRANSPORT table:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Rtno</th> <th>Area_overed</th> <th>Capacity</th> <th>Noofstudents</th> <th>Distance</th> <th>Transporter</th> <th>Charges</th> </tr> </thead> <tbody> <tr><td>1</td><td>Vasant kunj</td><td>100</td><td>120</td><td>10</td><td>Shivamtravels</td><td>100000</td></tr> <tr><td>2</td><td>Hauz Khas</td><td>80</td><td>80</td><td>10</td><td>Anand travels</td><td>85000</td></tr> <tr><td>3</td><td>Pitampura</td><td>60</td><td>55</td><td>30</td><td>Anand travels</td><td>60000</td></tr> <tr><td>4</td><td>Rohini</td><td>100</td><td>90</td><td>35</td><td>Anand travels</td><td>100000</td></tr> <tr><td>5</td><td>Yamuna Vihar</td><td>50</td><td>60</td><td>20</td><td>Bhalla Co.</td><td>55000</td></tr> <tr><td>6</td><td>Krishna Nagar</td><td>70</td><td>80</td><td>30</td><td>Yadav Co.</td><td>80000</td></tr> </tbody> </table>	Rtno	Area_overed	Capacity	Noofstudents	Distance	Transporter	Charges	1	Vasant kunj	100	120	10	Shivamtravels	100000	2	Hauz Khas	80	80	10	Anand travels	85000	3	Pitampura	60	55	30	Anand travels	60000	4	Rohini	100	90	35	Anand travels	100000	5	Yamuna Vihar	50	60	20	Bhalla Co.	55000	6	Krishna Nagar	70	80	30	Yadav Co.	80000	3
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	7	Vasundhara	100	110	20	Yadav Co.	100000																						
	8	Paschim Vihar	40	40	20	Speed travels	55000																						
	9	Saket	120	120	10	Speed travels	100000																						
	10	Jank Puri	100	100	20	Kisan Tours	95000																						
	<p>a) To show all information of students where capacity is more than the no of student in order of rtno.</p> <p>b) To show area_covered for buses covering more than 20 km., but charges less than 80000.</p> <p>c) select sum(distance) from schoolbus where transporter= "Yadav Co.";</p> <p>d) select min(noofstudents) from schoolbus;</p>																												
29	<p>Write definition of a method/function AddOddEven(VALUEs) to display sum of odd and even values separately from the list of VALUEs.</p> <p>For example : If the VALUEs contain [15, 26, 37, 10, 22, 13]</p> <p>The function should display</p> <p>Even Sum: 58</p> <p>Odd Sum: 65</p>								3																				
30	<p>Write PushOn(Book) and Pop(Book) methods/functions in Python to add a new Book and delete a Book from a List of Book titles, considering them to act as push and pop operations of the Stack data structure.</p> <p style="text-align: center;"><b>OR</b></p> <p>Write a program to implement a stack for the students(studentno, name). Just implement Pop and display.</p>								3																				
<b>SECTION-D</b>																													
31	<p>Ayurveda Training Educational Institute is setting up its centre in Hyderabad with four specialised 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. You, as a network expert, have to answer the queries as raised by them in (i) to (v).</p> <table border="1" style="width: 100%;"> <tbody> <tr> <td>Administrative Office to Orthopedics Unit</td> <td>55</td> </tr> <tr> <td>Neurology Unit to Administrative Office</td> <td>30</td> </tr> <tr> <td>Orthopedics Unit to Neurology Unit</td> <td>70</td> </tr> <tr> <td>Pediatrics Unit to Neurology Unit</td> <td>50</td> </tr> <tr> <td>Pediatrics Unit to Administrative Office</td> <td>40</td> </tr> <tr> <td>Pediatrics Unit to Orthopedics Unit</td> <td>110</td> </tr> </tbody> </table> <p>Number of Computers installed at various locations are as follow:</p> <table border="1" style="width: 100%;"> <tbody> <tr> <td>Administrative Office</td> <td>150</td> </tr> <tr> <td>Orthopedics Unit</td> <td>40</td> </tr> <tr> <td>Pediatrics Unit</td> <td>50</td> </tr> <tr> <td>Neurology Unit</td> <td>80</td> </tr> </tbody> </table>								Administrative Office to Orthopedics Unit	55	Neurology Unit to Administrative Office	30	Orthopedics Unit to Neurology Unit	70	Pediatrics Unit to Neurology Unit	50	Pediatrics Unit to Administrative Office	40	Pediatrics Unit to Orthopedics Unit	110	Administrative Office	150	Orthopedics Unit	40	Pediatrics Unit	50	Neurology Unit	80	5
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**Administrative  
Office**

**Orthopaedics  
Unit**

**Pediatrics  
Unit**

**Neurology  
Unit**

- i. Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
- ii. Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.
- iii. Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following : Gateway, switch, Modem
- iv. 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.
- v. Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

32	<p>a) What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also write the value assigned to variable first and second.</p> <pre>from random import randint LST=[5,10,15,20,25,30,35,40,45,50,60,70] first = random.randint(3,8) - 1 second = random.randint(4,9) - 2 third = random.randint(6,11) - 3 print(LST[first], "#", LST[second], "#", LST[third], "#")</pre> <p>i) 20#25#25# ii) 30#40#70# iii) 15#60#70# iv) 35#40#60#</p> <p>b) The code given below inserts the following record in the table Student:</p> <p>Empno – integer ENAME – string Designation – integer Salary – integer Bonus - Integer</p> <p>Note the following to establish connectivity between Python and MYSQL:</p> <ul style="list-style-type: none"><li>• Username is root</li><li>• Password is tiger</li><li>• The table exists in a MYSQL database named Employee.</li><li>• The details (Empno, ENAME, Designation, Salary and Bonus) are to be accepted</li></ul>	2+3
----	---	-----

	<p>from the user.</p> <p>Write the following missing statements to complete the code:</p> <p>Statement 1 – to form the cursor object</p> <p>Statement 2 – to execute the command that inserts the record in the table Employee.</p> <p>Statement 3- to add the record permanently in the database</p> <pre> import mysql.connector as mysql def sql_data():     con1=mysql.connect(host="localhost",user="root", password="tiger",         database="Employee")     mycursor=_____ #Statement 1     eno=int(input("Enter Employee Number: "))     Ename=input("Enter Employee Name: ")     Designation=input("Enter Designation: ")     Salary=int(input("Enter Salary: "))     Bonus=int(input("Enter Bonus: "))     query="insert into employee values({},'{}',{},{})".         format(eno,ename,designation,bonus)     _____ #Statement 2     _____ # Statement 3     print("Employee Data Added successfully") </pre> <p style="text-align: center;"><b>OR</b></p> <p>a) Predict the output:</p> <pre> def func(S):     k=len(S)     m=""     for i in range(0,k):         if S[i].isalpha( ):             m=m+S[i].upper( )         elif S[i].isdigit( ):             m=m+'0'         else:             m=m+'#'     print(m) func("Python 3.9") </pre> <p>b) What are the basic steps to connect Python with MYSQL using table Members present in the database 'Society'?</p>	
33	<p>Rohit, a student of class 12th, is learning CSV File Module in Python. During examination, he has been assigned an incomplete python code (shown below) to create a CSV File 'Student.csv' (content shown below). Help him in completing the code which creates the desired CSV File. CSV File</p> <pre> 1,AKSHAY,XII,A 2,ABHISHEK,XII,A 3,ARVIND,XII,A 4,RAVI,XII,A </pre>	5

5,ASHISH,XII,A

Incomplete Code

```
import _____ #Statement-1
fh = open(_____, _____, newline='') #Statement-2
stuwriter = csv._____ #Statement-3
data = []
header = ['ROLL_NO', 'NAME', 'CLASS', 'SECTION']
data.append(header)
for i in range(5):
    roll_no = int(input("Enter Roll Number : "))
    name = input("Enter Name : ")
    Class = input("Enter Class : ")
    section = input("Enter Section : ")
    rec = [_____] #Statement-4
    data.append(rec)
    stuwriter. _____ (data) #Statement-5
fh.close()
```

Answer the following questions

- i. Write the suitable code for blank space in line marked as Statement-1
- ii. Write the missing code for blank space in line marked as Statement-2?
- iii. Write function name (with argument) that should be used in the blank space of line marked as Statement-3
- iv. Complete the statement-4 with suitable code.
- v. Write the function name that should be used in the blank space of line marked as Statement-5 to create the desired CSV File?

**OR**

Your teacher has given you a method/function FilterWords() in python which read lines from a text file NewsLetter.TXT, and display those words, which are lesser than 4 characters. Your teachers intentionally kept few blanks in between the code and asked you to fill the blanks so that the code will run to find desired result. Do the needful with the following python code.

```
def FilterWords():
    c=0
    file=open('NewsLetter.TXT', '_____') #Statement-1
    line = file._____ #Statement-2
    word = _____ #Statement-3
    for c in word:
        if _____: #Statement-4
            print(c)
    _____ #Statement-5
```

FilterWords()

- i. Write mode of opening the file in statement-1?
- ii. Fill in the blank in statement-2 to read the data from the file.
- iii. Fill in the blank in statement-3 to read data word by word.
- iv. Fill in the blank in statement-4, which display the word having lesser than 4

v. Fill in the blank in Statement-5 to close the file.

### SECTION E

34 A department is considering to maintain their worker data using SQL to store the data. As a Database Administrator, Karan has decided that:

Name of the database –Department

Name of the table –Worker

The attributes of Worker are as follows:

WORKER\_ID – CHARACTER OF SIZE 3

FIRST\_NAME – CHARACTER OF SIZE 10

LAST\_NAME – CHARACTER OF SIZE 10

SALARY – NUMERIC

JOINING\_DATE – DATE

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
001	MONIKA	ARORA	100000	2014-02-20	HR
002	NIHARIKA	DIWAN	80000	2014-06-11	Admin
003	VISHAL	SINGHAL	300000	2014-02-20	HR
004	AMITABH	SINGH	500000	2014-02-20	Admin
005	VIVEK	BHATI	500000	2014-06-11	Admin
006	VIPUL	DIWAN	200000	2014-06-11	Account
007	SATISH	KUMAR	75000	2014-02-20	Account
008	MONIKA	CHAUHAN	80000	2014-04-11	Admin

- Karan wants to remove all the data from table WORKER from the database department. Write the command to delete above said information.
- Identify the attribute best suitable to be declared as a primary key.
- (i) Karan wants to increase the size of the FIRST\_NAME column from 10 to 20 characters. Write an appropriate query to change the size.  
(ii) Write a query to display the structure of the table Worker, i.e. name of the attribute and their respective data types

**OR (only for part c)**

Write command to create above table

35 Amritya Seth is a programmer, who has recently been given a task to write a python code to perform the following binary file operations with the help of two user defined functions/modules:

- AddStudents() to create a binary file called STUDENT.DAT containing student information – roll number, name and marks (out of 100) of each student.
- GetStudents() to display the name and percentage of those students who have a percentage greater than 75. In case there is no student having percentage > 75 the function displays an appropriate message. The function should also display the average percent.

**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**

**SAMPLE PAPER SET 4**

**CLASS – XII**

**SUBJECT: Computer Science-083**

**Total Time- 3 Hours**

**Total Marks- 70**

**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q34 against part iii only.
8. All programming questions are to be answered using Python Language only.

<b>SECTION A</b>		
1.	Find the invalid identifier from the following a) MyName    b) True    c) 2ndName    d) My_Name	1
2.	(Which of the following is a mutable datatype in Python? (a) String                      (b) List                      (c) Integer                      (d) Tuple	1
3.	Given the following dictionaries D1={"Exam": "ICSC", "Year": 2023, "Total": 500} Which statement will add a new value pair (Grade: "A++") in dictionary D1? a. D1.update("REMARK" : "EXCELLENT") b. D1 + {"REMARK" : "EXCELLENT"} c. D1["REMARK"] = "EXCELLENT" d. D1.merge({"REMARK" : "EXCELLENT"})	1
4.	Consider the given expression: not False or False and True Which of the following will be correct output if the given expression is evaluated? (a) True    b) False    c) NONE    d) NULL	1
5.	<b>Select the correct output of the code:</b> Str = "KENDRIYA VIDYALAYA SANGATHAN JAMMU REGION" Str = Str.split() NewStr = Str[0] + "#" + Str[1] + "#" + Str[4] print (NewStr)  a) KENDRIYA#VIDYALAYA#SANGATHAN# JAMMU b) KENDRIYA#VIDYALAYA#SANGATHAN c) KENDRIYA#VIDYALAYA# REGION d) None of these	1

6.	Assume that the position of file pointer is at the beginning of 3 <sup>rd</sup> line in a text file. Which of the following option can be used to read all remaining lines? (a) file.read() (b) file.readlines() (c) file.readline() (d) None of these	1
7.	Fill in the blank: _____command is used to change datatype of a field in table in SQL. (a) update (b)remove (c) alter (d)drop	1
8.	_____ in a table represent relationship among a set of values. (a) Column (b) Keys (c) Row (d) Entry	1
9.	Which of the following statement(s) would give an error after executing the following code?  <pre>P = "FIRST PRE BOARD" # Statement 1 print(P) # Statement 2 P = P[1:7] + "Questions" # Statement 3 P[0] = '&amp;' # Statement 4 P = P + "Over" # Statement 5</pre> (a) Statement 3 (b) Statement 4 (c) Statement 5 (d) Statement 4 and 5	1
10.	Fill in the blank: _____is a set of one or more attributes, which can uniquely identify any tuple in a relation. a) Primary Key b) Foreign Key c) Candidate Key d) Alternate Key	1
11.	The _____ method of _____ module is used to read data from binary file : a) read(), binary (b) load(), pickle c) dump(), binary (d) dump(), pickle	1
12.	Which keyword can be used to show only different values in a particular column in a table? a) DESCRIBE (b) DISTINCT (c) UNIQUE (d) NULL	1
13.	Fill in the blank: Which of the following statement are true about URL?  (a) URL means Uniform Resource Locator (b) We can enter URL into address bar (c) An example of URL is top@gg.com (d) Both A and B	1
14.	What will the following expression be evaluated to in Python? print(75.0 / 4 + (2** 3)) (a) 20.5 (b)20.05 (c) 18.25 (d) 17.75	1
15.	Which function is used to display the Smallest largest value from the selected column of table in a database? a) Small() (b) Least() (c) Min() (d) None of above()	1
16.	To establish a connection between Python and MySQL database, which of the following method is used? a) connector() (b) connect() (c) cont() (d) con()	1
	2	



<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>(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</p>		
17.	<p>Assertion (A):- Keyword arguments are related to function call statement.  Reasoning (R):- When we use keyword argument in a function call, the caller identifies the argument by the parameter.</p>	1
18.	<p>Assertion (A): CSV (Comma Separated Values) stands for Comma Separated values File.  Reason (R): CSV files are common file format for transferring and storing data.</p>	1
<p><b>SECTION B</b></p>		
19.	<p>Correct Code is</p> <pre>def DigitSum():     n = int( input("Enter number :: ")     dsum = 0     while n &gt; 0     d = n % 10         dsum =dsum + d         n = n //10     RETURN dsum</pre>	2
20.	<p>What is an E-mail? Write two advantages of an E-mail.</p> <p style="text-align: center;"><b>OR</b></p> <p>Write two points of difference between Bus topology and Star topology.</p>	2
21.	<p>(a) Given is a Python string declaration:  Word = "Connect Python"  Write the output of: print(Word[: : 3])</p> <p>(b) Write the output of the code given below:  dict = {"Item": "Laptop", "Make": "LG" }  dict["Price"] = 57000  dict["Make"] = "DELL"  for k in dict:  print(k, '@', dict[k])</p>	<p>1</p> <p>1</p>
22.	<p>What do you mean by Candidate Key in Relational Database Management System. Also define Alternate Key.</p>	2
23.	<p>(a) Write the full forms of the following:  (i) CDMA (ii) VOIP  (b) What is Web browser? Give name of two commonly used web browsers.</p>	2

24.	<p>Predict the output of the Python code given below:</p> <pre>L1 =[] def display(N):     for K in N:         if K % 2 ==0:             L1.append(K//2)         else:             L1.append(K*2) L = [11,22,33,45,55,66] print(L) display(L) print(L1)</pre> <p style="text-align: center;">OR</p> <p>Predict the output of the Python code given below:</p> <pre>T1 = (12, 22, 33, 55 ,66) list1 =list(T1) new_list = [] for i in list1:     if i%3==0:         new_list.append(i) new_T = tuple(new_list) print(new_T)</pre>	2
-----	--	---

25.	<p>Differentiate between WHERE and HAVING clause in SQL with appropriate example.</p> <p style="text-align: center;">OR</p> <p>Write any Two DDL and Two DML commands.</p>	2
-----	--	---

**SECTION C**

26	<p>A Stationery shop MyBag has decided to maintain its inventory of items using MySQL. As a database administer, Rahul has created the database and table as per the following :</p> <p>Name of the database -MyBag Name of the table - ITEMS</p> <p>The attributes of ITEMS are as follows: ItemNo – Numeric, ItemName – Character of size 20 ,Scode –Numeric,Quantity –Numeric</p> <p style="text-align: center;"><b>ITEMS</b></p> <table border="1" data-bbox="363 1464 1273 1749"> <thead> <tr> <th>ItemNo</th> <th>ItemName</th> <th>Scode</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>2005</td> <td>Sharpener Classic</td> <td>23</td> <td>60</td> </tr> <tr> <td>2002</td> <td>Get Pen Premium</td> <td>21</td> <td>150</td> </tr> <tr> <td>2006</td> <td>Get Pen Classic</td> <td>21</td> <td>250</td> </tr> <tr> <td>2001</td> <td>Eraser Small</td> <td>22</td> <td>220</td> </tr> <tr> <td>2004</td> <td>Eraser Big</td> <td>22</td> <td>110</td> </tr> </tbody> </table> <p>a. Identify the best suitable attribute to be declared as a primary key.</p> <p>b. Insert the following data into the attributes ItemNo, ItemName and SCode respectively in the given table ITEMS. ItemNo = 2010, ItemName = “Note Book” , Scode = 25 and Quantity=50</p> <p>c. Rahul wants to display all the records where ItemName starts with ‘G’. Write a MySQL query to do the same.</p>	ItemNo	ItemName	Scode	Quantity	2005	Sharpener Classic	23	60	2002	Get Pen Premium	21	150	2006	Get Pen Classic	21	250	2001	Eraser Small	22	220	2004	Eraser Big	22	110	1+2
ItemNo	ItemName	Scode	Quantity																							
2005	Sharpener Classic	23	60																							
2002	Get Pen Premium	21	150																							
2006	Get Pen Classic	21	250																							
2001	Eraser Small	22	220																							
2004	Eraser Big	22	110																							

27	<p>Write a function in Python to read from a text file "INDIA.TXT", to find and display those words of file which have 3 characters. For example, if the "INDIA.TXT" contents are as follows:</p> <p style="padding-left: 40px;">"India is the fastest growing economy. India is looking for more investments around the globe."</p> <p>The output of the function should be: <b>the for the</b></p>	3																																																		
28	<p>a) Write the outputs of the SQL queries (i) to (iv) based on the relations <b>BOOK and ISSUES</b> given below:</p> <p>Table : Book</p> <table border="1" data-bbox="311 521 1380 851"> <thead> <tr> <th>Book_id</th> <th>Book name</th> <th>Author_name</th> <th>Publisher</th> <th>Price</th> <th>Type</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>C0001</td> <td>Fast Cook</td> <td>Lata Kapoor</td> <td>EPB</td> <td>355</td> <td>Cookery</td> <td>5</td> </tr> <tr> <td>F0001</td> <td>The Tears</td> <td>William Hopkins</td> <td>First Pub</td> <td>650</td> <td>Fiction</td> <td>20</td> </tr> <tr> <td>T0001</td> <td>My First c++</td> <td>Brain &amp; Brooke</td> <td>FPB</td> <td>350</td> <td>Text</td> <td>10</td> </tr> <tr> <td>T0002</td> <td>C++ Brain works</td> <td>A.W. Rossaine</td> <td>TDH</td> <td>350</td> <td>Text</td> <td>15</td> </tr> <tr> <td>F0002</td> <td>Thunderbolts</td> <td>Anna Roberts</td> <td>First Publ.</td> <td>750</td> <td>Fiction</td> <td>50</td> </tr> </tbody> </table> <p>Table : issued</p> <table border="1" data-bbox="359 884 1332 1037"> <thead> <tr> <th>Book_Id</th> <th>Quantity Issued</th> </tr> </thead> <tbody> <tr> <td>T0001</td> <td>4</td> </tr> <tr> <td>C0001</td> <td>5</td> </tr> <tr> <td>F0001</td> <td>2</td> </tr> </tbody> </table> <p>i. Select Count(*) from Books  ii. Select Max(Price) from books where quantity &gt;=15  iii. Select book_name, author_name from books where publishers='First Publ.'  iv. Select a.book_id,a.book_name,b.quantity_issued from books a, issued b where a.book_id=b.book_id</p> <p>(b) Write the command to open a database "RAILWAY" in MySQL.</p>	Book_id	Book name	Author_name	Publisher	Price	Type	Quantity	C0001	Fast Cook	Lata Kapoor	EPB	355	Cookery	5	F0001	The Tears	William Hopkins	First Pub	650	Fiction	20	T0001	My First c++	Brain & Brooke	FPB	350	Text	10	T0002	C++ Brain works	A.W. Rossaine	TDH	350	Text	15	F0002	Thunderbolts	Anna Roberts	First Publ.	750	Fiction	50	Book_Id	Quantity Issued	T0001	4	C0001	5	F0001	2	3
Book_id	Book name	Author_name	Publisher	Price	Type	Quantity																																														
C0001	Fast Cook	Lata Kapoor	EPB	355	Cookery	5																																														
F0001	The Tears	William Hopkins	First Pub	650	Fiction	20																																														
T0001	My First c++	Brain & Brooke	FPB	350	Text	10																																														
T0002	C++ Brain works	A.W. Rossaine	TDH	350	Text	15																																														
F0002	Thunderbolts	Anna Roberts	First Publ.	750	Fiction	50																																														
Book_Id	Quantity Issued																																																			
T0001	4																																																			
C0001	5																																																			
F0001	2																																																			
29.	<p>Write the definition of a function <b>Reverse(X)</b> in Python to display the elements in reverse order such that each displayed element is twice of the original element (element *2) of the List X in the following manner:</p> <p>For example, if List X contains 7 integers as follows:</p> <table border="1" data-bbox="331 1518 1200 1601"> <thead> <tr> <th>X[0]</th> <th>X[1]</th> <th>X[2]</th> <th>X[3]</th> <th>X[4]</th> <th>X[5]</th> <th>X[6]</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>8</td> <td>7</td> <td>5</td> <td>6</td> <td>2</td> <td>10</td> </tr> </tbody> </table> <p>After executing the function, the array content should be displayed as follows:</p> <table border="1" data-bbox="331 1657 1200 1740"> <thead> <tr> <th>X[0]</th> <th>X[1]</th> <th>X[2]</th> <th>X[3]</th> <th>X[4]</th> <th>X[5]</th> <th>X[6]</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>4</td> <td>12</td> <td>10</td> <td>14</td> <td>16</td> <td>8</td> </tr> </tbody> </table>	X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]	4	8	7	5	6	2	10	X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]	20	4	12	10	14	16	8	3																						
X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]																																														
4	8	7	5	6	2	10																																														
X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]																																														
20	4	12	10	14	16	8																																														

30	<p>Consider a binary file Employee.dat containing details such as empno:ename:salary(separator ':'). Write a Python function Readfile() to display details of those employees who are earning between 20000 and 40000(both values inclusive) also count how many records are available in the file.</p> <p style="text-align: center;">OR</p> <p>A binary file named "TEST.dat" has some records of the structure [TestId, Subject, MaxMarks, ScoredMarks]</p> <p>Write a function in Python named DisplayAvgMarks(Sub) that will accept a subject as an argument and read the contents of TEST.dat. The function will calculate &amp; display the Average of the ScoredMarks of the passed Subject on screen.</p>	3
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**SECTION D**

31	<p>Software Development Company has set up its new center at Raipur for its office and web based activities. It has 4 blocks of buildings named Block A, Block B, Block C, Block D.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">No of Computers in each Block</th> <th colspan="2">Distance between various blocks</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Block A</td> <td style="text-align: center;">25</td> <td style="text-align: center;">Block A to Block B</td> <td style="text-align: center;">60 Mtrs</td> </tr> <tr> <td style="text-align: center;">Block B</td> <td style="text-align: center;">50</td> <td style="text-align: center;">Block B to Block C</td> <td style="text-align: center;">40 Mtrs</td> </tr> <tr> <td style="text-align: center;">Block C</td> <td style="text-align: center;">125</td> <td style="text-align: center;">Block C to Block A</td> <td style="text-align: center;">30 Mtrs</td> </tr> <tr> <td style="text-align: center;">Block D</td> <td style="text-align: center;">10</td> <td style="text-align: center;">Block D to Block C</td> <td style="text-align: center;">50 Mtrs</td> </tr> </tbody> </table> <p>a) Suggest the most suitable place (i.e. block) to house the server of this company with a suitable reason.</p> <p>b) Suggest the ideal layout to connect all the blocks with a wired connectivity.</p> <p>c) Which device will you suggest to be placed/installed in each of these blocks to efficiently connect all the computers within these blocks.</p> <p>d) Suggest the placement of a repeater in the network with justification.</p> <p style="text-align: center;">The company is planning to link all the blocks through a secure and high speed wired medium. Suggest a way to connect all the blocks.</p>	No of Computers in each Block		Distance between various blocks		Block A	25	Block A to Block B	60 Mtrs	Block B	50	Block B to Block C	40 Mtrs	Block C	125	Block C to Block A	30 Mtrs	Block D	10	Block D to Block C	50 Mtrs	5
No of Computers in each Block		Distance between various blocks																				
Block A	25	Block A to Block B	60 Mtrs																			
Block B	50	Block B to Block C	40 Mtrs																			
Block C	125	Block C to Block A	30 Mtrs																			
Block D	10	Block D to Block C	50 Mtrs																			

32	<p>(a) Write the output of the code given below:</p> <p>Find and write the output of the following python code:</p> <pre>def encrypt(s):     k=len(s)     m=""     for i in range(0,k):         if(s[i].isupper()):             m=m+str(i)         elif s[i].islower():             m=m+s[i].upper()         else:             m=m+'*'     print(m)  encrypt('KVS@Jammu')</pre> <p>(b) The code given below inserts the following record in the table <b>Item</b>:</p>	2+3
----	--	-----

ItemNo – integer  
Name – string  
Price – integer  
Qty – integer

Note the following to establish connectivity between Python and MYSQL:

- Username is root
- Password is beeta
- The table exists in a MYSQL database named RESOURCE.
- The details (ItemNo, Name, Price and Qty) are to be accepted from the user.

Write the following missing statements to complete the code:

Statement 1 – to import the required module

Statement 2 – to execute the command that inserts the record in the table Student.

Statement 3- to add the record permanently in the database

```
import _____ as mysql # Statement 1

def sql_data():
    con1=mysql.connect(host="localhost", user="root",
        password="omega", database="resource")
    mycursor= con1.cursor()
    ItemNo = int(input("Enter ItemNo :: "))
    Name = input("Enter name :: ")
    Price = int(input("Enter price :: "))
    Qty = int(input("Enter Qty :: "))
    query="insert into student
    values({}, '{}',{ }, {})" .format(Itemno, Name, Price, Qty)
    _____ #Statement 2
    _____ # Statement 3
    print("Data Added successfully")
```

OR

(a) Predict the output of the code given below:

```
s="Back2Basic"
n=len(s)
NS=""
for i in range(0, n):
    if (s[i] in "aeiou"):
        NS = NS + s[i].upper()
    elif (s[i] >= 'a' and s[i] <= 'z'):
        NS = NS +s[i].lower()
    else:
        NS = NS + '#'
print(NS)
```

(b) The code given below reads the following record from the table named student and displays only those records who have marks greater than 85:

RollNo – integer  
Name – string  
Class – integer  
Marks – integer

Note the following to establish connectivity between Python and MYSQL:

	<ul style="list-style-type: none"> <li>• Username is root</li> <li>• Password is tiger</li> <li>• The table exists in a MYSQL database named school.</li> </ul> <p>Write the following missing statements to complete the code:</p> <p>Statement 1 – to form the cursor object  Statement 2 – to execute the query that extracts records of those students whose marks are greater than 85.  Statement 3- to read the complete result of the query (records whose marks are greater than 85) into the object named data, from the table student in the database.</p> <pre>import mysql.connector as mysql  def sql_data():     con1=mysql.connect(host="localhost",user="root", password="tiger",         database="school")     mycursor=_____ #Statement 1     print("Students with marks greater than 85 are :")     _____ #Statement 2     data = _____ #Statement 3     for i in data:         print(i)     print()</pre>	
33.	<p>a) What do you mean by a csv file?</p> <p>b) A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price].</p> <p>a) Write a user defined function CreateFile() to input data for a record and add to Book.dat file.</p> <p>b) Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books written by the given Author are stored in the binary file "Book.dat"</p> <p style="text-align: center;">OR</p> <p>a) Difference between a binary file and a csv file.</p> <p>b) Write a function in python, <b>pushme(stock, item)</b> and <b>popme(stock)</b> to add a new item and delete an item from the stock, considering them to act as push and pop operations of the stack.</p>	5 (1+2+2)
<b>SECTION E</b>		

34

Nawal Rao creates a table **Emp**

1+1+2

Emp no	Name	Dept	Design	Gender	Salary	City
1	Deepika	Sales	Mgr	F	55000	Delhi
2	Gagan	Acct	Opt	M	20000	Patna
3	Neelam	Comp	Opt	F	25000	Delhi
4	Vijay	Sales	Mgr	M	45000	Lucknow
5	Sunita	Acct	Opt	F	14000	Delhi
6	Rajesh	Sales	Clrk	M	35000	Patna
7	Kunal	Comp	Mgr	M	40000	Lucknow

Based on the data given above answer the following questions:

- (i) Identify the most appropriate column, which can be considered as Primary key.
- (ii) If one column is added and 2 rows are deleted from the table EMP, what will be the new degree and cardinality of the above table?
- (iii) Write the statements to:
  - a. Insert the following record into the table  
EmpNo- 8, Name- Ravi, Dept- Sales, Design- Mgr, Gender- M, Salary – 34000, City- Delhi .
  - b. Increase the Salary of the Employees who are in Acct department by 3%.

OR (Option for part iii only)

- (iii) Write the statements to:
  - a. Delete the record of Employees who lives in Delhi.
  - b. Add a column MobNo in the table with datatype as varchar with 10 characters

35

Aditya has written a code and created a binary file **record.dat** with ItemNo, Itname and Price.

As a Python expert, help him to complete the following code based on the requirement given above:

```

Import _____ #Statement 1
def Add_data():
    fin = open("record.dat", "___") #Statement 2
    Lst = [áá', 3.5, 66,77, 8, 10]
    _____.(Lst, fin) #Statement 3
    print("Record Added")
    fin._____ #Statement 4

```

Add\_Rec()

- a) Name the Module that Aditya should import in Statement 1
- b) In which mode, Aditya should open the file to add data into the file in statement 2.
- c) Fill in the blank in statement 3 to fetch the data to a file and statement 4 to close the file.

1  
1  
2

KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET 5

CLASS – XII

SUBJECT: Computer Science-083

Total Time- 3 Hours

Total Marks- 70

**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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q1.	Which is a valid identifier in python? (a) int (b) len (c) ssum1 (d) all of them	1
Q2.	Which type of Programming does Python support? (a) object-oriented programming (b) structured programming (c) functional programming (d) all of the mentioned	1
Q3	Which keyword is used for function in Python language? (a) Function (b) def (c) Fun (d) Define	1
Q4.	Create the dictionary on data Exam="PB" Year="2013" Where exam and year are keys	1
Q5.	Consider the given expression: not True and False or True	1



	<p>Which of the following will be correct output if the given expression is evaluated?</p> <p>(a) True  (b) False  (c) None  (d) NULL</p>	
Q6.	<p>What is the output of the following?</p> <pre>print("KV Sangathan".split('an'))</pre> <p>(a) ['KV S', 'gath', ' ']  (b) ['KV Sangathan', 'an']  (c) ['KV', 'Sang', 'athan']  (d) All of them</p>	1
Q7.	<p>Which of the following modes will refer to binary data?</p> <p>(a) r  (b) wb  (c) +  (d) a</p>	1
Q8.	<p>Fill in the blank:</p> <p>_____ command is used to remove the database in sql.</p> <p>(a) Update  (b) Remove  (c) Drop  (d) alter</p>	1
Q9.	<p>Which of the following commands will be delete the table from MYSQL Database?</p> <p>(a) Delete table  (b) Drop Table  (c) Remove Table  (d) Alter Table</p>	1
Q10	<p>If the following code is executed, what will be the output of the following code?</p> <pre>name="Kendriya Vidyalaya Sangathan" print(name[10:19])</pre> <p>(a) Kendriya  (b) Vidyalaya  (c) Sangathan  (d) nry iy</p>	1
Q11	<p>Which of the following types of table constraints will prevent the printing of duplicate values after the Select statement fetches data from table?</p> <p>(a) Unique  (b) Distinct  (c) Primary Key</p>	1

	(d) NULL	
Q12	What is the use of tell () function in python	1
Q13	Switch is a A. Broadcast device B. Unicast device C. Multicast device D. None of the above	1
Q14	What will the following expression be evaluated to in python? print(15.0/4+(8*3.0)) (a) 14.5 (b) 14.0 (c) 27.7 (d) 15.5	1
Q15	Which function is used to display the sum of column of records from table in a database? (a) sum(*) (b) total(*) (c) count(*) (d) return(*)	1
Q16	What is the use of connect () function ?	1
Q17	Q17 and 18 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 (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):- If the arguments in function call statement match the number and order of arguments as defined in the function definition, such arguments are called positional arguments. Reasoning (R):- During a function call, the argument list first contains default argument(s) followed by positional argument(s).	1
Q18	Assertion (A): CSV (Comma Separated Values) is a file format for data storage which looks like a text file. Reason (R): The information is organized with one record on each line and each	1
	Section-B	
Q19	Mr. Ram has written a code to input two numbers and swap the number using function but he has some error in his coding, so help him to rectify the errors and rewrite the correct code. Def swap(a,b) c=a a=b b=c print("a is",a,"b is",b ) #main()	2

	<pre>a=int(input("enter in a ")) b=int(input("enter in b")) Swap(a,b)#calling a function</pre>													
Q20	<p>What is the difference between a hub and a switch in context of computer networking devices?</p> <p style="text-align: center;"><b>OR</b></p> <p>Differentiate between HTTP and FTP.</p>	2												
Q21	<p>Evaluate the following expressions:</p> <p><b>(a)</b> <math>5 // 10 * 9 \% 3 ** 8 + 8 - 4</math></p> <p><b>(b)</b> <math>65 &gt; 55</math> or not <math>8 &lt; 5</math> and <math>0 != 55</math></p>	2												
Q22	<p>Explain the use of 'Foreign Key' in a Relational Database Management System.</p> <p>Give example to support your answer.</p>	2												
Q23	<p>Expand the following terms:</p> <p>IMAP sHTTP URL POP3</p>	2												
Q24	<p>Predict the output of the Python Code given below:</p> <pre>d={"Rohan":67,"Asham":78,"naman":89,"pranav":79} print(d) sum=0 for i in d:     sum+=d[i]     print(sum) print("sum of values of dictionaries",sum) or (i) def check(x,y):     if x != y:         return x+5     else:         return y+10 print(check(10,5))</pre>	2												
Q25	<p>Write the full forms of DDL and DML. Write any two commands of DDL in SQL.</p> <p>Or</p> <p>In SQL, write the name of the aggregate function which is used to calculate &amp; display the sum of numeric values in an attribute of a relation.</p>	2												
Section- C														
Q26	<p>Write the outputs of the SQL queries (i) to (iii) based on the given tables:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4" style="text-align: center;">Table: Event</th> </tr> <tr> <th style="width: 15%;">EventID</th> <th style="width: 30%;">Event</th> <th style="width: 20%;">NumPerformers</th> <th style="width: 35%;">CelebrityID</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Table: Event				EventID	Event	NumPerformers	CelebrityID					3
Table: Event														
EventID	Event	NumPerformers	CelebrityID											

101	Birthday	10	C102
102	Promotion Party	20	C103
103	Engagement	12	C102
104	Wedding	15	C104

Table: Celebrity			
CelebrityID	Event	Phone	FeeCharged
C101	FaizKhan	9910154555	200000
C102	Sanjay Kumar	6546454654	250000
C103	Neera Khan	4654656544	300000
C104	Reena Bhatia	9854664654	100000

- (i) SELECT Event, NumPerformers FROM Event where EvenID>102;
- (ii) SELECT max(FeeCharged), min(FeeCharged) FROM Celebrity;
- (iii) SELECT Event.Event, Event.NumPerformers, Celebrity.Phone ,  
Celebrity.FeeCharged FROM Event, Celebrity WHERE  
Event.Celebrity = Celebrity.CelebrityID;

Q27	<p>Write a function in Python that counts the number of “the” or “this” words present in a text file “myfile.txt”.</p> <p>Example: If the “myfile.txt” contents are as follows: This is my first class on Computer Science. File handling is the easiest topic for me and Computer Networking is the most interesting one. The output of the function should be: Count of the/this in file: 3</p> <p style="text-align: center;"><b>OR</b></p> <p>Write a function countVowels() in Python, which should read each character of a text file “myfile.txt”, count the number of vowels and display the count. Example: If the “myfile.txt” contents are as follows: This is my first class on Computer Science. The output of the function should be: Count of vowels in file: 10</p>	3
-----	---	---

Q28	<p>Books.</p> <table border="1" data-bbox="521 243 1222 422"> <thead> <tr> <th>Book id</th> <th>Book name</th> <th>Author name</th> <th>Publisher</th> <th>Price</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>C0001</td> <td>Fast Cook</td> <td>Lata Kapoor</td> <td>EPB</td> <td>355</td> <td>5</td> </tr> <tr> <td>F0001</td> <td>The Tears</td> <td>William hopkin</td> <td>NIL</td> <td>650</td> <td>20</td> </tr> <tr> <td>T0001</td> <td>My First Py</td> <td>Brain&amp; Brooke</td> <td>EPB</td> <td>350</td> <td>10</td> </tr> <tr> <td>T0002</td> <td>Brain works</td> <td>A.W. Rossaine</td> <td>TDH</td> <td>450</td> <td>15</td> </tr> <tr> <td>F0002</td> <td>Thunderbolts</td> <td>Anna Roberts</td> <td>NIL</td> <td>750</td> <td>5</td> </tr> </tbody> </table> <p>i. Select Count(Publisher) from Books;</p> <p>ii. Select Max(Price) from books where qty &gt;=15;</p> <p>iii. Select count(distinct publishers) from books where Price&gt;=400;</p>	Book id	Book name	Author name	Publisher	Price	Qty	C0001	Fast Cook	Lata Kapoor	EPB	355	5	F0001	The Tears	William hopkin	NIL	650	20	T0001	My First Py	Brain& Brooke	EPB	350	10	T0002	Brain works	A.W. Rossaine	TDH	450	15	F0002	Thunderbolts	Anna Roberts	NIL	750	5	3
Book id	Book name	Author name	Publisher	Price	Qty																																	
C0001	Fast Cook	Lata Kapoor	EPB	355	5																																	
F0001	The Tears	William hopkin	NIL	650	20																																	
T0001	My First Py	Brain& Brooke	EPB	350	10																																	
T0002	Brain works	A.W. Rossaine	TDH	450	15																																	
F0002	Thunderbolts	Anna Roberts	NIL	750	5																																	
Q29	Write a function INDEX_LIST(L), where L is the list of elements passed as argument to the function. The function returns sum of odd nos in list .	3																																				
Q30	<p>Two list Lname and Lage contains name of person and age of person respectively. A list named Lnameage is empty. Write functions as details given below</p> <p>(i) Push_na() :- it will push the tuple containing pair of name and age from Lname and Lage whose age is above 50</p> <p>(ii) Pop_na() :- it will remove the last pair of name and age and also print name and age of removed person. It should also print “underflow” if there is nothing to remove</p> <p>For example the two lists has following data  Lname=['narender', 'jaya', 'raju', 'ramesh', 'amit', 'Piyush']  Lage=[45,23,59,34,51,43]</p> <p>After Push_na() the contains of Lnameage stack is  [('raju',59),('amit',51)]</p> <p>The output of first execution of pop_na() is  The name removed is amit  The age of person is 51</p> <p style="text-align: center;"><b>OR</b></p> <p>A dictionary stu contains rollno and marks of students. Two empty list stack_roll and stack_mark will be used as stack. Two function push_stu() and pop_stu() is defined and perform following operation</p> <p>(a) Push_stu() :- It reads dictionary stu and add keys into stack_roll and values into stack_marks for all students who secured more than 60 marks.</p> <p>(b) Pop_stu() :- it removes last rollno and marks from both list and print “underflow” if there is nothing to remove</p> <p>For example  stu={1:56,2:45,3:78,4:65,5:35,6:90}</p> <p>values of stack_roll and stack_mark after push_stu()  [3,4,6] and {78,65,90}</p>	3																																				

	Section-D																					
Q31	<p>Tech Up Corporation is a professional consultancy company. The company is planning to set up their offices in India with it's hub at Hyderabad. As a network advisor, you have to understand their requirement and suggest to them the best available solutions.</p> <p><b>Block to Block distance (in meters):</b></p> <table border="1" data-bbox="277 520 1154 762"> <thead> <tr> <th>Block (From)</th> <th>Block</th> <th>Distance (in meter)</th> </tr> </thead> <tbody> <tr> <td>Human Resource</td> <td>Conference</td> <td>60</td> </tr> <tr> <td>Human Resource</td> <td>Finance</td> <td>60</td> </tr> <tr> <td>Conference</td> <td>Finance</td> <td>120</td> </tr> </tbody> </table> <p><b>Expected number of Computers to be installed in each block:</b></p> <table border="1" data-bbox="277 877 1154 1119"> <thead> <tr> <th>Block</th> <th>Computer</th> </tr> </thead> <tbody> <tr> <td>Human Resource</td> <td>125</td> </tr> <tr> <td>Finance</td> <td>25</td> </tr> <tr> <td>Conference</td> <td>60</td> </tr> </tbody> </table> <p>(a) What will be the most appropriate block where TUC should plan to install their server? <span style="float: right;">1</span></p> <p>(b) What will be the best possible connectivity out of the following to connect its new office in Bengaluru with its London based office? <span style="float: right;">1</span></p> <p style="padding-left: 20px;">(i) Infrared</p> <p style="padding-left: 20px;">(ii) Satellite Link</p> <p style="padding-left: 20px;">(iii) Ethernet Cable</p> <p>(c) Which of the following devices will you suggest to connect each computer in each of the above blocks? <span style="float: right;">1</span></p> <p style="padding-left: 20px;">(i) Gateway</p> <p style="padding-left: 20px;">(ii) Switch</p> <p style="padding-left: 20px;">(iii) Hub</p>	Block (From)	Block	Distance (in meter)	Human Resource	Conference	60	Human Resource	Finance	60	Conference	Finance	120	Block	Computer	Human Resource	125	Finance	25	Conference	60	
Block (From)	Block	Distance (in meter)																				
Human Resource	Conference	60																				
Human Resource	Finance	60																				
Conference	Finance	120																				
Block	Computer																					
Human Resource	125																					
Finance	25																					
Conference	60																					

	<p>(iv) Modem</p> <p>(d) Write names of any two popular open Source software which are used as Operating Systems.</p> <p>(e) Suggest an ideal layout for connecting these blocks/centers for a wired connectivity</p>	<p>1</p> <p>1</p>
Q32	<p>(a) Write the output of the code given below:</p> <pre> p=5 def sum(q,r=2):global     p p=r+q**2     print(p, end= '#')  a=10 b=5 sum(a,b) sum(r=5,q=1) </pre> <p>(b)The given program is used to connect with MySQL abd show the name of the all the record from the table “stmaster” from the database “oraclenk”. You are required to complete the statements so that the code can be executed properly.</p> <pre> import _____.connector_as_pymysql  dbcon=pymysql._____(host="localhost", user="root", _____"="sia@1928") if dbcon.isconnected()==False:     print("Error in establishing connection:") cur=dbcon._____( ) query="select * from stmaster" cur.execute(_____) resultset=cur.fetchmany(3) for row in resultset:     print(row) dbcon._____( ) </pre> <p style="text-align: center;">OR</p> <p>(a) Predict the output of the code given below:</p> <pre> s="welcome2cs" n = len(s)m="" </pre>	<p>2+3</p>

	<pre> for i in range(0, n):     if (s[i] &gt;= 'a' and s[i] &lt;= 'm'):m =m +s[i].upper()     elif (s[i] &gt;= 'n' and s[i] &lt;= 'z'):m = m +s[i-1]     elif (s[i].isupper()): m = m +         s[i].lower()     else:         m = m +'&amp;' print(m)  (b) The code given below reads the following record from the tablenamed student and displays only those records who have marks greater than 75: RollNo – integer Name – string Clas – integer Marks – integer  Note the following to establish connectivity between Python andMYSQL: <ul style="list-style-type: none"> <li>• Username is root</li> <li>• Password is tiger</li> <li>• The table exists in a MYSQL database named school.</li> </ul>  Write the following missing statements to complete the code:Statement 1 – to form the cursor object Statement 2 – to execute the query that extracts records of those students whose marks are greater than 75. Statement 3- to read the complete result of the query (records whose marks are greater than 75) into the object named data, from thetable studentin the database.  import mysql.connector as mysqldef sql_data():      con1=mysql.connect(host="localhost",user="root",password="tiger",         database="school")     mycursor=_____ #Statement 1     print("Students with marks greater than 75 are :")     _____ #Statement 2     data=_____ #Statement 3     for i in data:         print(i) print() </pre>	
Q33	<p>What is the advantage of using a csv file for permanent storage?  Write a Program in Python that defines and calls the following userdefined functions:</p>	5



- (i) ADD() – To accept and add data of an employee to a CSV file ‘record.csv’. Each record consists of a list with field elements as empid, name and mobileto store employee id, employeename and employee salary respectively.
- (ii) COUNTR() – To count the number of records present in the CSVfile named ‘record.csv’.

OR

Give any one point of difference between a binary file and a csv file. Write a Program in Python that defines and calls the following user defined functions:

- (i) add() – To accept and add data of an employee to a CSV file ‘furdata.csv’. Each record consists of a list with fieldelements as fid, fname and fpriceto store furnitureid, furniture name and furniture price respectively.
- search()- To display the records of the furniture whoseprice is more than 10000.

Section-E

Q34

Nishant creates a table RESULT with a set of records to maintain the marks secured by students in Sem 1, Sem2, Sem3 and their division. After creation of the table, he has entered data of 7 students in the table.

ROLL_NO	SNAME	SEM1	SEM2	SEM3	DIVISION
101	KARAN	366	410	402	I
102	NAMAN	300	350	325	I
103	ISHA	400	410	415	I
104	RENU	350	357	415	I
105	ARPIT	100	75	178	IV
106	SABINA	100	205	217	II
107	NEELAM	470	450	471	I

Based on the data given above answer the following questions:

- (i) Identify the most appropriate column, which can be considered as Primary key.
- (ii) If two columns are added and 2 rows are deleted from the table result, what will be the new degree and cardinality of the above table?
- (iii) Write the statements to:
  - a. Insert the following record into the table  
Roll No- 108, Name- Aadit, Sem1- 470, Sem2-444, Sem3-475, Div – I.
  - b. Increase the SEM2 marks of the students by 3% whose

1+1+  
2

	<p style="text-align: center;">name begins with 'N'.</p> <p style="text-align: center;">OR (Option for part iii only)</p> <p>(iii) Write the statements to:</p> <ol style="list-style-type: none"> <li>a. Delete the record of students securing IV division.</li> <li>b. Add a column REMARKS in the table with datatype as varcharwith 50 characters</li> </ol>	
<p>Q35</p>	<p>Anamika is a Python programmer. She has written a code and created a binary file <b>data.dat</b> with sid, sname and marks. The file contains 10 records. She now has to update a record based on the sid entered by the user and update the marks. The updated record is then to be written in the file <b>extra.dat</b>. The records which are not to be updated also have to be written to the file extra.dat. If the sid is not found, an appropriate message should to be displayed.</p> <p>As a Python expert, help him to complete the following code based on requirement given above:</p> <pre> import ..... #Statement 1 def update_data():     rec={}     fin=open("data.dat","rb")     fout=open("_____ ") #Statement 2     found=False     eid=int(input("Enter student id to update their marks :: "))     while True:         try:             rec=_____ #Statement 3             if rec["student id"]==sid:                 found=True                 rec["marks"]=int(input("Enter new marks:: "))                 pickle._____ #Statement 4             else:                 pickle.dump(rec,fout)         except:             break     if found==True:         print("The marks of student id ",sid," hasbeen updated.")     else:         print("No student with such id is not found")     fin.close()     fout.close() </pre> <p>(i) Which module should be imported in the program? (Statement1)</p> <p>(ii) Write the correct statement required to open a temporary filenameed extra.dat. (Statement 2)</p>	<p style="text-align: right;">1</p> <p style="text-align: right;">1</p>

	(iii) Which statement should Anamika fill in Statement 3 to read the data from the binary file, data.dat and in Statement 4 to write the updated data in the file, <b>extra.dat</b> ?	2
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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET 6

CLASS – XII

SUBJECT: Computer Science-083

Total Time- 3 Hours

Total Marks- 70

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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q1.	State True or False "variable declaration is implicit in Python"	1
Q2.	Which type of Programming does Python support? (a) object-oriented programming (b) structured programming (c) functional programming (d) all of the mentioned	1
Q3	Which of the following is an invalid datatypes in Python? (a) Set (b) None (c) Integer (d) Real	1
Q4.	Given the following dictionaries exam={"Exam":"AISSCE","Year":2023} result={"Total":500,"Pass_Marks":165} (a) dict_exam.update(result) (b) dict_exam+result (c) dict_exam.add(result) (d) dict.merge(result)	1
Q5.	Suppose a tuple T is declare as: T=(10,12,43,39) Which of the following is in correct?	1

	<p>(a) print(t[1])  (b) T[2]==-29  (c) print(max(T)  (d) print(len(T))</p>	
Q6.	<p>What is the output of the following?  print('KV Sangathan'.split('an'))  (a) ['KV S', 'gath', ' ']  (b) ['KV Sangathan', 'an']  (c) ['KV', 'Sang', 'athan']  (d) All of them</p>	1
Q7.	<p>What is the output of the following code.  Str1="Hello World"  str1.replace('o','*')  str.replace('o','*')  (a) Hello World  (b) Hell* W*rld  (c) Hello W*rld  (d) Error</p>	1
Q8.	<p>What is the datatype of the result set extracted from the database using the cursor object when we use the following:  (a) fetchone( ) method  (b) fetchall( ) method</p>	1
Q9.	<p>Which of the following commands will be delete the table from MYSQL Database?  (a) Delete table  (b) Drop Table  (c) Remove Table  (d) Alter Table</p>	1
Q10	<p>If the following code is executed, what will be the output of the following code?  name="Kendriya Vidyalaya Sangathan"  print(name[2:13:2])  (a) Kendriya  (b) Vidyalaya  (c) Sangathan  (d) nry iy</p>	1
Q11	<p>Which of the following types of table constraints will prevent the printing of duplicate values after the Select statement fetches data from table?  (a) Unique  (b) Distinct  (c) Primary Key  (d) NULL</p>	1
Q12	<p>The Correct syntax of seek() is:  (a) File_object.seek(offset[,reference_point])</p>	1

	<p>(b) seek(offset[,referece_point])</p> <p>(c) seek(offset,file_object)</p> <p>(d) seek.file_object(offset)</p>	
Q13	<p>(i) Expand the following: ARPANET, TCP/IP</p>	1
Q14	<p>What will the following expression be evaluated to in python? print(15.0/4+(8+3.0))</p> <p>(a) 14.5 (b) 14.0 (c) 15 (d) 15.5</p>	1
Q15	<p>Which function is used to display the total number of records from table in a database?</p> <p>(a) sum(*) (b) total(*) (c) count(*) (d) return(*)</p>	1
Q16	<p>To establish a connection between Python and sql database, connect() is used. Which of the following arguments may not necessarily be given while calling connect() ?</p> <p>(a) host (b) database (c) user (d) password</p>	1
Q17	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>(a) Both A and R are true and R is the correct explanation for (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</p>	
17.	<p>Assertion (A):-Serialization is the process of transforming data to a stream of bytes Reasoning (R):-It is also known as Picking</p>	1
Q18	<p>Assertion (A): CSV (Comma Separated Values) is a file format for data storage which looks like a text file. Reason (R): The information is organized with one record on each line and each</p>	1
	Section-B	
Q19	<p>Mr. Ram has written a code to input two numbers and swap the number using function but he has some error in his coding, so help him to rectify the errors and rewrite the correct code.</p> <pre>Def swap(a,b)     c=a     a=b     b=c     print("a is",a,"b is",b ) #main() a=int(input("enter in a "))</pre>	2

	<pre>b=int(input("enter in b")) Swap(a,b)#calling a function</pre>																					
Q20	<p>What is the difference between a hub and a switch in context of computer networking devices?</p> <p style="text-align: center;">OR</p> <p>Differentiate between HTTP and FTP.</p>	2																				
Q21	<p>Evaluate the following expressions:</p> <p>(a) <math>5 // 10 * 9 \% 3 ** 8 + 8 - 4</math></p> <p>(b) <math>65 &gt; 55</math> or not <math>8 &lt; 5</math> and <math>0 != 55</math></p>	2																				
Q22	<p>Explain the use of 'Foreign Key' in a Relational Database Management System. Give example to support your answer.</p>	2																				
Q23	<p>Define the following terms: Web server, Web Hosting</p> <p style="text-align: center;">OR</p> <p>Give two advantages and two disadvantages of bus topology.</p>	2																				
Q24	<p>Predict the output of the Python Code given below:</p> <pre>d={"Rohan":67,"Asham":78,"naman":89,"pranav":79} print(d) sum=0 for i in d:     sum+=d[i]     print(sum) print("sum of values of dictionaries",sum) or for i in range(1,3):     print('answer ',i,'is', i**2)</pre>	2																				
Q25	<p>Write the full forms of DDL and DML. Write any two commands of DDL in SQL.</p> <p>Or</p> <p>Categories the following commands as DDL or DML: INSERT, UPDATE,ALTER,DROP</p>	2																				
	Section- C																					
Q26	<p>Write the outputs of the SQL queries (i) to (iii) based on the given tables:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">Table: Event</th> </tr> <tr> <th>EventID</th> <th>Event</th> <th>NumPerformers</th> <th>CelebrityID</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Birthday</td> <td>10</td> <td>C102</td> </tr> <tr> <td>102</td> <td>Promotion Party</td> <td>20</td> <td>C103</td> </tr> <tr> <td>103</td> <td>Engagement</td> <td>12</td> <td>C102</td> </tr> </tbody> </table>	Table: Event				EventID	Event	NumPerformers	CelebrityID	101	Birthday	10	C102	102	Promotion Party	20	C103	103	Engagement	12	C102	3
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103	Engagement	12	C102																			

104	Wedding	15	C104																																																		
Table: Celebrity																																																					
CelebrityID	Event	Phone	FeeCharged																																																		
C101	FaizKhan	9910154555	200000																																																		
C102	Sanjay Kumar	6546454654	250000																																																		
C103	Neera Khan	4654656544	300000																																																		
C104	Reena Bhatia	9854664654	100000																																																		
<p>(i) SELECT Event, NumPerformers FROM Event where EvenID&gt;=104;</p> <p>(ii) SELECT max(FeeCharged) FROM Celebrity;</p> <p>(iii) SELECT Event.Event, Event.NumPerformers, Celebrity.Phone , Celebrity.FeeCharged FROM Event, Celebrity WHERE Event.Celebrity = Celebrity.CelebrityID;</p>																																																					
Q27	<p>Write a user-defined function named count() that will read the contents of text file named "Story.txt" and count the number of lines which starts with either "I" or "M". E.g. In the following paragraph, there are 2 lines starting with "I" or "M":</p> <p style="text-align: center;">OR</p> <p>Write a function country() in Python to read the text file "Story.txt" and count the number of times "my" or "My" occurs in the file. For example if the file "Story.TXT" contains: "This is my website. I have displayed my preferences in the CHOICE section." The country() function should display the output as: "my occurs 2 times".</p>			3																																																	
Q28	<p>(a) Write the output of the following sql queries (i) to (iv) based on the relations Teacher and Placement given below:</p> <p>Table: Teacher</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>T_ID</th> <th>Name</th> <th>Age</th> <th>Department</th> <th>DOJ</th> <th>Salary</th> <th>Gender</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Arunan</td> <td>34</td> <td>Computer Sc</td> <td>2019-01-01</td> <td>12000</td> <td>M</td> </tr> <tr> <td>2</td> <td>Saman</td> <td>31</td> <td>History</td> <td>2017-03-24</td> <td>20000</td> <td>F</td> </tr> <tr> <td>3</td> <td>Randeep</td> <td>32</td> <td>Mathematics</td> <td>2020-12-12</td> <td>30000</td> <td>M</td> </tr> <tr> <td>4</td> <td>Samira</td> <td>35</td> <td>History</td> <td>2018-07-01</td> <td>40000</td> <td>F</td> </tr> <tr> <td>5</td> <td>Raman</td> <td>42</td> <td>Mathematics</td> <td>2021-09-05</td> <td>25000</td> <td>M</td> </tr> <tr> <td>6</td> <td>Shyam</td> <td>50</td> <td>History</td> <td>2019-06-27</td> <td>30000</td> <td>M</td> </tr> </tbody> </table>			T_ID	Name	Age	Department	DOJ	Salary	Gender	1	Arunan	34	Computer Sc	2019-01-01	12000	M	2	Saman	31	History	2017-03-24	20000	F	3	Randeep	32	Mathematics	2020-12-12	30000	M	4	Samira	35	History	2018-07-01	40000	F	5	Raman	42	Mathematics	2021-09-05	25000	M	6	Shyam	50	History	2019-06-27	30000	M	3
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7	Shiv	44	Computer Sc	2019-02-25	21000	M
8	Shalakra	33	Mathematics	2018-07-31	20000	F

Table :Placement

P_ID	Department	Place
1	History	Ahmedabad
2	Mathematics	Jaipur
3	Computer Sc	Nagpur

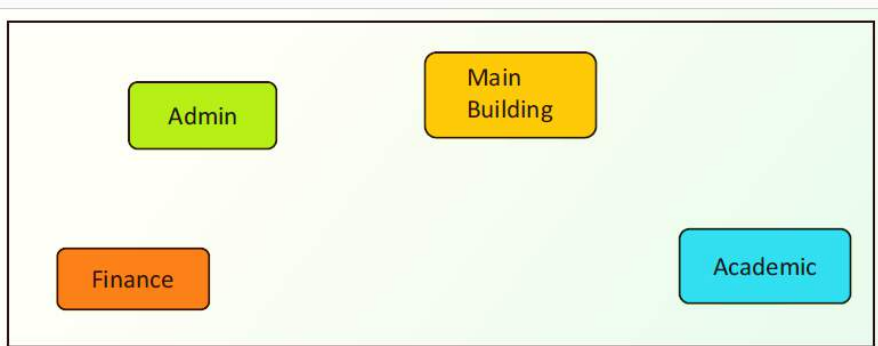
- (i) SELECT Department, avg(salary) FROM Teacher GROUPBY Department;
- (ii) SELECT MAX(DOJ), MIN(DOJ ) FROM Teacher;
- (iii) SELECT NAME , SALARY, T. Department, Place from Teacher T, Placement P where T. Department =P.Department and Salary>20000;
- (iv) SELECT Name, Place from Teacher T, Placement P;

Q29 Write a program to calculate and display the sum of all the odd numbers in the list. 3

Q30 Alam has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list.  
 | Traverse the content of the list and push the even numbers into a stack.  
 | Pop and display the content of the stack.  
 For Example:  
 If the sample Content of the list is as follows:  
 N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38]  
 Sample Output of the code should be:38 22 98 56 34 12  
 OR  
 Write a function in Python, Pop(Arr), where Arr is a stack implemented by a list of numbers. The function should return the value deleted from the stack. 3

Section-D

Q31 National Centre for Indigenous Arts has just set up a new Campus and they want to set up a Local area network.



The distances between various buildings of university are given as:-

- Main to Admin 50 mtr
- Main to Finance 100 mtr
- Main to Academic 70 mtr
- Admin to Finance 70 mtr

	<p>Finance 50 mtr Finance to Academic 70 mtr Admin to Academic 60 mtr</p> <p>Number of computers in each building:- Main Building 150 Admin Building 75 Finance Building 50 Academic Building 60</p> <p>As a network expert, you are required to give best possible solutions for the given queries of the university administration:-</p> <p>(a) Suggest and draw cable layout to efficiently connect various buildings/blocks.</p> <p>(b) Suggest the most suitable building to house the server of this university with a suitable reason.</p> <p>(c) Suggest the placement of following devices with justification: 1. Switch/Hub 2. Repeater</p> <p>(d) Suggest the transmission medium out of the following for setting-up very fast Internet connectivity among buildings of the university 1. Optical Fiber 2. Coaxial cable 3. Ethernet Cable</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
Q32	<p>(a) Write the output of the code given below:</p> <pre>p=5 def sum(q,r=2):global p     p=r+q**2     print(p, end= '#')</pre> <p>a=10 b=5 sum(a,b) sum(r=5,q=1)</p> <p>(b) The code given below inserts the following record in the table Student:</p>	2+3

RollNo – integer

Name – string

Class– integer

Marks – integer

Note the following to establish connectivity between Python and MySQL:  
Username is root, Password is tiger. The table exists in a MySQL database named school. The details (RollNo, Name, Class and Marks) are to be accepted from the user.

Write the following missing statements to complete the code:  
Statement 1 – to form the cursor object  
Statement 2 – to execute the command that inserts the record in the table Student.  
Statement 3 – to add the record permanently in the database

```
import mysql.connector as mysql

def sql_data():
    con1=mysql.connect(host="localhost",user="root",password="tiger",database="school")
    mycursor=_____ #Statement 1
    rno=int(input("Enter Roll Number :: ")) name=input("Enter name :: ")
    clas=int(input("Enter class :: ")) marks=int(input("Enter Marks :: "))
    query="insert into student
values({},'{}',{},{}).format(rno,name,clas,marks)
#Statement 2
# Statement 3

    print("Data Added successfully")
```

OR

(a) Predict the output of the code given below:

```
s="hello kv *& INdia"
n = len(s)
m=""
for i in range(0, n):
    if (s[i] >= 'a' and s[i] <= 'm'):
        m = m +s[i].upper()
    elif (s[i] >= 'n' and s[i] <= 'z'):
        m = m +s[i-1]
    elif (s[i].isupper()): m = m + s[i].lower()
else:
    m = m + '&'
print(m)
```

(b) The code given below reads the following record from the table named student

	<p>and displays only those records who have marks greater than 75:  RollNo – integer  Name – string  Clas – integer  Marks – integer</p> <p>Note the following to establish connectivity between Python andMySQL:</p> <ul style="list-style-type: none"> <li>• Username is root</li> <li>• Password is tiger</li> <li>• The table exists in a MYSQL database named school.</li> </ul> <p>Write the following missing statements to complete the code:Statement 1 – to form the cursor object  Statement 2 – to execute the query that extracts records of thosestudents whose marks are greater than 75.  Statement 3- to read the complete result of the query (records whose marks are greater than 75) into the object named data, from thetable studentin the database.</p> <pre>import mysql.connector as mysql def sql_data():      con1=mysql.connect(host="localhost",user="root",password="tiger",     database="_____") statement 1     mycursor=_____ #Statement 2     print("Students with roll greater than 10 are :")     data=_____ #Statement 3     for i in data:         print(i) print()</pre>	
<p>Q33 .</p>	<p>What is the advantage of using a csv file for permanent storage?  Write a Program in Python that defines and calls the following userdefined functions:</p> <p>(i) ADD() – To accept and add data of an employee to a CSV file ‘record.csv’. Each record consists of a list with field elements as empid, name and mobileto store employee id, employeename and employee salary respectively.  (ii) COUNTR() – To count the number of records present in the CSVfile named ‘record.csv’.</p> <p style="text-align: center;">OR</p> <p>Give any one point of difference between a binary file and a csv file.Write a Program in Python that defines and calls the following user defined functions:</p> <p>(i) add() – To accept and add data of an employee to a CSV file ‘furdata.csv’. Each record consists of a list with fieldelements as fid, fname and fpriceto store furnitureid, furniture name and furniture price respectively.</p>	<p>5</p>

	search()- To display the records of the furniture whose price is more than 10000.																																																	
	Section-E																																																	
Q34	<p>Nishant creates a table RESULT with a set of records to maintain the marks secured by students in Sem 1, Sem2, Sem3 and their division. After creation of the table, he has entered data of 7 students in the table.</p> <table border="1"> <thead> <tr> <th>ROLL_NO</th> <th>SNAME</th> <th>SEM1</th> <th>SEM2</th> <th>SEM3</th> <th>DIVISION</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>KARAN</td> <td>366</td> <td>410</td> <td>402</td> <td>I</td> </tr> <tr> <td>102</td> <td>NAMAN</td> <td>300</td> <td>350</td> <td>325</td> <td>I</td> </tr> <tr> <td>103</td> <td>ISHA</td> <td>400</td> <td>410</td> <td>415</td> <td>I</td> </tr> <tr> <td>104</td> <td>RENU</td> <td>350</td> <td>357</td> <td>415</td> <td>I</td> </tr> <tr> <td>105</td> <td>ARPIT</td> <td>100</td> <td>75</td> <td>178</td> <td>IV</td> </tr> <tr> <td>106</td> <td>SABINA</td> <td>100</td> <td>205</td> <td>217</td> <td>II</td> </tr> <tr> <td>107</td> <td>NEELAM</td> <td>470</td> <td>450</td> <td>471</td> <td>I</td> </tr> </tbody> </table> <p>Based on the data given above answer the following questions:</p> <p>(i) Identify the most appropriate column, which can be considered as Primary key.</p> <p>(ii) If 3 columns are added and 2 rows are deleted from the table result, what will be the new degree and cardinality of the above table?</p> <p>(iii) Write the statements to:</p> <ol style="list-style-type: none"> <li>Insert the following record into the table Roll No- 110, Name- Aadit, Sem1- 470, Sem2-444, Sem3-475, Div – I.</li> <li>Increase the SEM2 marks of the students by 3% whose name begins with 'N'.</li> </ol> <p style="text-align: center;">OR (Option for part iii only)</p> <p>(iii) Write the statements to:</p> <ol style="list-style-type: none"> <li>Delete the record of students securing I division.</li> <li>Add a column REMARKS in the table with datatype as varchar with 100 characters</li> </ol>	ROLL_NO	SNAME	SEM1	SEM2	SEM3	DIVISION	101	KARAN	366	410	402	I	102	NAMAN	300	350	325	I	103	ISHA	400	410	415	I	104	RENU	350	357	415	I	105	ARPIT	100	75	178	IV	106	SABINA	100	205	217	II	107	NEELAM	470	450	471	I	1+1+2
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Q35	<p>Devi is a Python programmer. He has written a code and created a binary file record.dat with employeeid, ename and salary. The file contains 10 records. He now has to update a record based on the employee id entered by the user and update the salary. The updated record is then to be written in the file temp.dat. The records which are not to be updated also have to be written to the file temp.dat. If the employee id is not found, an appropriate message should be displayed. As a Python expert, help him to complete the following code based on the requirement given above:</p> <pre> import <span style="float: right;">#Statement 1</span> def update_data():     rec={}     fin=open("record.dat","rb") </pre>																																																	

	<pre> fout=open(" -----") found=False eid=int(input("Enter employee id to update theirsalary :: ")) while True:     try:         rec=_____ #Statement 3         if rec["Employee id"]==eid:             found=True             rec["Salary"]=int(input("Enter new salary:: "))             pickle._____ #Statement 4         else:             pickle.dump(rec,fout)except:                 break     if found==True:         print("The salary of employee id ",eid," hasbeen updated.")     else:         print("No employee with such id is not found")fin.close() fout.close() </pre> <p>(i) Which module should be imported in the program? (Statement1)</p> <p>(ii) Write the correct statement required to open a temporary file named temp.dat. (Statement 2)</p> <p>(iii) Which statement should Aman fill in Statement 3 to read the data from the binary file, record.dat and in Statement 4 to write the updated data in the file, temp.dat?</p>	
		1
		1
		2

**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**  
**SAMPLE PAPER SET – 7**

**CLASS – XII**

**Subject: COMPUTER SCIENCE**

**Maximum Marks: 70**

**Time Allotted: 3 hours**

**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each.
8. All programming questions are to be answered using Python Language only.

<b>SECTION – A</b>		
<b>1.</b>	Python identifiers are case sensitive. a) True b) False	<b>1</b>
<b>2.</b>	Find the invalid identifier from the following: a) None b) address c) Name d) Pass	<b>1</b>
<b>3.</b>	Which is the correct form of declaration of dictionary? a) Day={1:'Monday',2:'Tuesday',3:'Wednesday'} b) Day={'1:Monday','2:Tuesday','3:Wednesday'} c) Day=(1:'Monday',2:'Tuesday',3:'Wednesday') d) Day=[1:'Monday',2:'Tuesday',3:'Wednesday']	<b>1</b>
<b>4.</b>	What is the output of 'hello'+1+2+3? a) hello123 b) hello6 c) Error d) Hello+6	<b>1</b>
<b>5.</b>	What will be the output for the following Python statement? T=(10,20,[30,40,50],60,70) T[2][1]=100 print(T) a) (10,20,100,60,70) b) (10,20,[30,100,50],60,70) c) (10,20,[100,40,50],60,70) d) None of these	<b>1</b>
<b>6.</b>	Which of the following is not a correct Python statement to open a text file "Notes.txt" to write content into it? a) F=open('Notes.txt','w') b) F=open('Notes.txt','a') c) F=open('Notes.txt','A') d) F=open('Notes.txt','w+')	<b>1</b>
<b>7.</b>	Which command is used to add a new constraint in existing table in SQL. a) insert into b) alter table c) add into d) create table	<b>1</b>

8.	<p>Which SQL command is used to change some values in existing rows?</p> <p>a) update b) insert c) alter d) order</p>	1
9.	<pre>STRING="WELCOME"      Line1 NOTE= " "             Line2 for S in range[0,8]:  Line3     print(STRING[S])  Line4 print(S STRING)      Line5</pre> <p>Which statement is wrong in above code:</p> <p>a) Line3 and Line4 b) Line4 and Line5 c) Line2 and Line3 d) Line3 and Line5</p>	1
10.	<p>Which of the following aggregate function ignore NULL value?</p> <p>a) COUNT b) MAX c) AVERAGE d) ALL OF THESE</p>	1
11.	<p>Which of the following option is the correct Python statement to read and display the first 10 characters of a text file "Notes.txt"?</p> <p>a) F=open("Notes.txt"); print(F.load(10)) b) F=open("Notes.txt"); print(F.dump(10)) c) F=open("Notes.txt"); print(F.read(10)) d) F=open("Notes.txt"); print(F.write(10))</p>	1
12.	<p>Consider the following statement: SELECT * FROM PRODUCT ORDER BY RATE....., ITEM_NAME .....</p> <p>Which of the following option should be used to display the rate from greater to smaller and name in alphabetical order?</p> <p>a) ASC, DESC b) DESC, ASC c) Descending, Ascending d) Ascending, Descending</p>	1
13.	<p>The function of a repeater is to take a weak signals and ..... it.</p> <p>a) Restore b) Regenerate c) Reroute d) Drop</p>	1
14.	<p>Evaluate the following expression and identify the correct answer: <math>16 - (4 + 2) * 5 + 2 ** 3 * 4</math></p> <p>a) 54 b) 46 c) 18 d) 32</p>	1
15.	<p>In SQL, which command is use to display the structure of table stored in a database.</p> <p>a) Describe b) Display c) Select d) Alter</p>	1
16.	<p>Which of the following is invalid method for fetching the records from database within Python</p> <p>a) fetchone()</p>	1



	<b>b)</b> fetchall() <b>c)</b> fetchmany() <b>d)</b> fetchmulti()	
<b>Q17 and 18</b> are ASSERTION AND REASONING based questions. Mark the correct choice as <b>a)</b> Both A and R are true and R is the correct explanation for A <b>b)</b> Both A and R are true and R is not the correct explanation for A <b>c)</b> A is True but R is False <b>d)</b> A is false but R is True		
<b>17.</b>	<b>Assertion (A):</b> Built-in function are predefined in the language that are used directly. <b>Reason (R):</b> print() and input() are built-in functions	<b>1</b>
<b>18.</b>	<b>Assertion (A):</b> Access mode 'a' opens a file for appending. <b>Reason (R):</b> The file pointer is at the end of the file if the file exists.	<b>1</b>
<b>SECTION – B</b>		
<b>19.</b>	Rewrite the following code in python after removing all errors. Underline each correction done in the code:  <pre>num=int("Enter any value") for in range(0,11):     if num==i         print num+i     else:         Print num-i</pre>	<b>2</b>
<b>20.</b>	Differentiate between web browser and web server.  <b>OR</b> Identify the type of topology from the following: <b>a)</b> Each node is connected with central switching through independent cable. <b>b)</b> Each node is connected with the help of a single cable.	<b>2</b>
<b>21.</b>	<b>a)</b> Given a Tuple tup1=(10,20,30,40,50,60,70,80,90). What will be the output of print(tup1[3:7:2])? <b>b)</b> Write the output of following code: lst1=[10,15,20,25,30] lst1.insert(3,4) lst1.insert(2,3) print(lis[-5])	<b>1</b>
<b>22</b>	What do you mean by alternate key in a relation/table? Give a suitable example of alternate key.	<b>2</b>
<b>23</b>	<b>a)</b> Which protocol helps us to browse web pages on browsers? <b>b)</b> Write full form of the following: <b>i)</b> IMAP <b>ii)</b> POP	<b>1</b>
<b>24</b>	Write the output of the following Python program code:  <pre>Value = 100 def funvalue():     global Value     Value//=9     print(Value,end=" ")     Value-=10     print(Value,end=" ") funvalue()</pre>	<b>2</b>

	<p><b>OR</b></p> <pre>TXT = ["10","20","30","5"] CNT = 3 TOTAL = 0 for C in [7,5,4,6]:     T = TXT[CNT]     TOTAL = float(T) + C print (TOTAL) CNT-=1</pre>																																														
25	<p>What do you understand by GROUP BY in SQL? Explain the use of HAVING clause with GROUP BY.</p> <p style="text-align: center;"><b>OR</b></p> <p>Write the full form of DDL and DML also write any two commands of DML in SQL.</p>	2																																													
<b>Section-C</b>																																															
26	<p>a)</p> <p style="text-align: center;"><b>Table: GAMES</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>GCode</th> <th>GameName</th> <th>Number</th> <th>PrizeMoney</th> <th>ScheduleDate</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Carom Board</td> <td>2</td> <td>5000</td> <td>23-Jan-2004</td> </tr> <tr> <td>102</td> <td>Badminton</td> <td>2</td> <td>12000</td> <td>12-Dec-2003</td> </tr> <tr> <td>103</td> <td>Table Tennis</td> <td>4</td> <td>8000</td> <td>14-Feb-2004</td> </tr> <tr> <td>105</td> <td>Chess</td> <td>2</td> <td>9000</td> <td>01-Jan-2004</td> </tr> <tr> <td>108</td> <td>Lawn Tennis</td> <td>4</td> <td>25000</td> <td>19-Mar-2004</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Table: PLAYER</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>PCode</th> <th>Name</th> <th>Gcode</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nabi Ahmad</td> <td>101</td> </tr> <tr> <td>2</td> <td>Ravi Sahai</td> <td>108</td> </tr> <tr> <td>3</td> <td>Jatin</td> <td>101</td> </tr> <tr> <td>4</td> <td>Nazneen</td> <td>103</td> </tr> </tbody> </table> <p>(i) SELECT COUNT(DISTINCT Number) FROM GAMES;  (ii) SELECT MAX(ScheduleDate),MIN(ScheduleDate) FROM GAMES GROUP BY NUMBER HAVING COUNT(*)&gt;2;  (iii) SELECT SUM(PrizeMoney) FROM GAMES;  (iv) SELECT AVG(PRIZEMONEY) FROM GAMES;</p> <p>b) Define Equi join with a suitable example</p>	GCode	GameName	Number	PrizeMoney	ScheduleDate	101	Carom Board	2	5000	23-Jan-2004	102	Badminton	2	12000	12-Dec-2003	103	Table Tennis	4	8000	14-Feb-2004	105	Chess	2	9000	01-Jan-2004	108	Lawn Tennis	4	25000	19-Mar-2004	PCode	Name	Gcode	1	Nabi Ahmad	101	2	Ravi Sahai	108	3	Jatin	101	4	Nazneen	103	2+1
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3	Jatin	101																																													
4	Nazneen	103																																													
27	<p>Write a function in python to count the number of lowercase and uppercase character in a text file "Story.txt".</p> <p style="text-align: center;"><b>OR</b></p> <p>Write a function to calculate the average word size in a text file "Report.txt" each word is separated by a single space or full stop.</p>	3																																													
28	<p>Write SQL commands for (a) to (d) and write output for (e) to (f) on the basis of PRODUCTS table:</p> <p style="text-align: center;"><b>PRODUCT TABLE</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>PCODE</th> <th>PNAME</th> <th>COMPANY</th> <th>PRICE</th> <th>STOCK</th> <th>MANUFACTURE</th> <th>WARRANTY</th> </tr> </thead> <tbody> <tr> <td>P001</td> <td>TV</td> <td>BPL</td> <td>10000</td> <td>200</td> <td>12-JAN-2008</td> <td>3</td> </tr> <tr> <td>P002</td> <td>TV</td> <td>SONY</td> <td>12000</td> <td>150</td> <td>23-MAR-2007</td> <td>4</td> </tr> <tr> <td>P003</td> <td>PC</td> <td>LENOVO</td> <td>39000</td> <td>100</td> <td>09-APR-2008</td> <td>2</td> </tr> <tr> <td>P004</td> <td>PC</td> <td>COMPAQ</td> <td>38000</td> <td>120</td> <td>20-JUN-2009</td> <td>2</td> </tr> <tr> <td>P005</td> <td>HANDYCAM</td> <td>SONY</td> <td>18000</td> <td>250</td> <td>23-MAR-2007</td> <td>3</td> </tr> </tbody> </table> <p>a) To show details of all PCs with stock more than 110.</p>	PCODE	PNAME	COMPANY	PRICE	STOCK	MANUFACTURE	WARRANTY	P001	TV	BPL	10000	200	12-JAN-2008	3	P002	TV	SONY	12000	150	23-MAR-2007	4	P003	PC	LENOVO	39000	100	09-APR-2008	2	P004	PC	COMPAQ	38000	120	20-JUN-2009	2	P005	HANDYCAM	SONY	18000	250	23-MAR-2007	3	3			
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	<p><b>b)</b> To list the company which gives warranty for more than 2 years.  <b>c)</b> To show number of products from each company.  <b>d)</b> To show the PRODUCT name which are within warranty as on date.  Give the output of following statements :-  <b>e)</b> Select COUNT(distinct company) from PRODUCT;  <b>f)</b> Select MAX(price) from PRODUCT where WARRANTY&lt;=3;</p>	
<b>29</b>	<p>Write a function in Shift(Lst), Which accept a List 'Lst' as argument and swaps the elements of every even location with its odd location and store in different list  eg. if the array initially contains  2, 4, 1, 6, 5, 7, 9, 2, 3, 10  then it should contain  4, 2, 6, 1, 7, 5, 2, 9, 10, 3</p>	<b>3</b>
<b>30</b>	<p>Write a function in Python PUSH(A), where A is a list of numbers. From this list push all even numbers into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.  <b>OR</b>  Write a function in python Popstack(Lst), where Lst is a stack implemented by a list of numbers. The function returns the value deleted from the stack.</p>	<b>3</b>

**SECTION-D**

<b>31</b>	<p>Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 150px; height: 50px;"><b>Accounts</b></div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 150px; height: 50px;"><b>Research Lab</b></div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 150px; height: 50px;"><b>Store</b></div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 150px; height: 50px;"><b>Packaging Unit</b></div> </div> <p>Shortest distance between various buildings</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Accounts to Research Lab</td> <td>55 m</td> </tr> <tr> <td>Accounts to Store</td> <td>150 m</td> </tr> <tr> <td>Store to Packaging Unit</td> <td>160 m</td> </tr> <tr> <td>Packaging Unit to Research Lab</td> <td>60 m</td> </tr> <tr> <td>Accounts to Packaging Unit</td> <td>125 m</td> </tr> <tr> <td>Store to Research Lab</td> <td>180 m</td> </tr> </table> <p>No. of computers installed at various buildings are as follow:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Accounts</td> <td>25</td> </tr> <tr> <td>Research Lab</td> <td>100</td> </tr> <tr> <td>Store</td> <td>15</td> </tr> <tr> <td>Packaging Unit</td> <td>60</td> </tr> </table> <p>As a network expert, provide the best possible answer for the following queries:</p> <p><b>(i)</b> Suggest a cable layout of connections between the buildings.  <b>(ii)</b> Suggest the most suitable place (i.e. buildings) to house the server of this organization.  <b>(iii)</b> Suggest the placement of the following device with justification:  a) Repeater b) Hub/Switch  <b>(iv)</b> Suggest a system (hardware/software) to prevent unauthorized access</p>	Accounts to Research Lab	55 m	Accounts to Store	150 m	Store to Packaging Unit	160 m	Packaging Unit to Research Lab	60 m	Accounts to Packaging Unit	125 m	Store to Research Lab	180 m	Accounts	25	Research Lab	100	Store	15	Packaging Unit	60	<b>5</b>
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Packaging Unit	60																					

	<p>to or from the network.</p> <p>(v) Which service/protocol will be most helpful to conduct live interactions between the buildings?</p>	
<p><b>32</b></p>	<p><b>a)</b> Study the following program and select the possible output(s) from the options (i) to (iv) following it.</p> <pre>import random Ar=[20,30,40,50,60,70] From = random.randint(1,3) To = random.randint(2,4) for K in range(From,To+1):     print(Ar[K],end="%")</pre> <p>(i) 10%40%70%  (ii) 30%40%50%  (iii) 50%60%70%  (iv) 40%50%60%</p> <p><b>b)</b> The code given below inserts the following record in the table Student:  Empno – integer  ENAME – string  Designation – integer  Salary – integer  Bonus - Integer  Note the following to establish connectivity between Python and MYSQL:  • Username is root  • Password is tiger  • The table exists in a MYSQL database named Employee.  • The details (Empno, ENAME, Designation, Salary and Bonus) are to be accepted from the user.  Write the following missing statements to complete the code:  Statement 1 – to form the cursor object  Statement 2 – to execute the command that inserts the record in the table Employee.  Statement 3- to add the record permanently in the database</p> <pre>import mysql.connector as mysql def sql_data():     con1=mysql.connect(host="localhost",user="root", password="tiger", database="Employee")     mycursor=_____ #Statement 1     eno=int(input("Enter Employee Number: "))     Ename=input("Enter Employee Name: ")     designation=input("Enter Designation: ")     salary=int(input("Enter Salary: "))     bonus=int(input("Enter Bonus: "))     query="insert into employee values({},'{}',{},{})". format(eno,ename,designation,bonus)     _____ #Statement 2     _____ # Statement 3     print("Employee Data Added successfully")</pre> <p style="text-align: center;"><b>OR</b></p> <p><b>a)</b> Write the output of the following Python program code:</p>	<p><b>2+3</b></p>

```

def changedata(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)
changedata("CbSe_exam@2023")

```

**b)** Consider the table Product with following structure:  
P\_ID, ProductName, Manufacture, Price.  
Write python code to increase the price of all product by 50.

**33** A binary file "Toy.dat" has structure [TID, Toy, Status, MRP].

- i.** Write a user defined function CreateFile() to input data for a record and add to Toy.dat.
- ii.** Write a function OnOffer() in Python to display the detail of those Toys, which has status as "ON OFFER" from Toy.dat file.

**OR**

- i.** A binary file "ITEMS.DAT" has structure (ID, GIFT, Cost). Write a function to write more items in ITEM.DAT
- ii.** Write a function Economic() in Python that would read contents of the file "ITEMS.DAT" and display the details of those ITEMS whose cost is greater than 2500.

**SECTION-E**

**34** A music store MySports is considering to maintain their inventory using SQL to store the data. The detail is as follow:

- Name of the database – MySports
- Name of the table – Sports
- The attributes of SPORTS are as follows:
  - SCode – character
  - SportName – character of size 20
  - Noofplayers – numeric
  - coachname – character of size 20

Table: SPORTS

SCode	SportName	No. of players	Coachname
S001	Cricket	21	Rahul Dravid
S002	Football	25	Roshan Lal
S003	Hockey	40	Sardar Singh
S004	Cricket	19	Chetan Sharma
S005	Archery	12	Limbaram
S006	Shooting	17	Deepika Kumari

- a)** Identify the attribute best suitable to be declared as a primary key
- b)** Write the degree and cardinality of the SPORTS table
- c)** Insert the following data into the attributes SCode, SportName and No. of players respectively in the given table SPORTS.  
SCode = S007, SportName = "Kabbadi" and Noofplayers = 15

	<p style="text-align: center;"><b>OR</b></p> <p><b>d)</b> Someone wants to delete the column coachname. Which command will he use from the following:</p> <p><b>i)</b> DELETE Coachname FROM SPORTS;</p> <p><b>ii)</b> ALTER Coachname FROM SPORTS</p> <p><b>iii)</b> ALTER TABLE SPORTS DROP Coachname</p> <p><b>iv)</b> DELETE Coachname FROM SPORTS</p>	
<p><b>35</b></p>	<p>Arjun 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.</p> <pre> import _____ # Line 1 def addCsvFile(UserName,PassWord): # module to write data into a CSV file     f=open('user.csv','w')     newFileWriter = csv._____(f) # Line 2     x=[UserName,PassWord]     newFileWriter._____(x) # Line 3     f._____( ) # Line 4 def readCsvFile(): # to read data from CSV file     with open(' user.csv', 'r') as newFile:         newFileReader = csv.reader(newFile)         for row in newFileReader:             print (row[0],row[1]) addCsvFile(“Arjun”,“123@456”) addCsvFile(“Arunima”,“aru@nima”) addCsvFile(“Frieda”,“myname@FRD”) readCsvFile() </pre> <p><b>a)</b> Name the module he should import in Line 1.</p> <p><b>b)</b> Fill in the blank in Line 2 to write data into a csv file.</p> <p><b>c)</b> Fill in the blank in Line 3 to write record into a csv file.</p> <p><b>d)</b> Fill in the blank in Line 4 to close the file.</p>	<p><b>4</b></p>

**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**  
**SAMPLE PAPER SET – 8**

**CLASS – XII**

**Subject: COMPUTER SCIENCE**

**Maximum Marks: 70**

**Time Allotted: 3 hours**

**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

<b>SECTION A</b>		
1.	Which of the following is an invalid identifier? (a) true (b) print (c) 4ever (d) While	1
2.	Consider the following expression $5+2**6<9+2-16//8$ Which of the following will be correct output if the given expression is evaluated? (a) 127 (b) False (c) True (d) Invalid expression	1
3.	State True or False “ There is no conceptual limit to the size of a list.”	1
4.	Which of the following options will not result in an error when performed on types in python where $tp = (5,2,7,0,3)$ ? (a) $tp[1] = 22$ (b) $tp.append(23)$ (c) $tp1 = tp+tp*2$ (d) $tp.sum()$	1
5.	Select the correct output of the code: <pre>mystr = 'Python programming is fun!' mystr = mystr.partition('pro') mystr='\$'.join(mystr)</pre> (a) Python \$programming is fun! (b) Python \$pro\$gramming is fun! (c) Python\$ pro\$ gramming is fun!\$ (d) P\$ython \$p\$ro\$gramming is \$fun!	1
6.	Which of the following commands is used to open a file “c:\test.txt” for reading and writing data in binary format only. (a) <code>myfile = open('c:\\test.txt','rb+')</code> (b) <code>myfile = open('c:\test.txt\','wb')</code>	1

	(c) myfile = open('c:\test.txt','w+') (d) myfile = open('c:\\test.txt','rb')	
7.	Which of the following operators can take wild card characters for query condition? (a) BETWEEN (b) LIKE (c) IN (d) NOT	1
8.	In SQL, which of the following will select only one copy of each set of duplicable rows from a table? (a) SELECT UNIQUE (b) SELECT DISTINCT (c) SELECT DIFFERENT (d) All of these	1
9.	Given tp = (1,2,3,4,5,6). Which of the following two statements will give the same output? 1. print(tp[:-1]) 2. print(tp[0:5]) 3. print(tp[0:4]) 4. print(tp[-4:])  (a) Statement 1 and 2 (b) Statement 2 and 4 (c) Statement 1 and 4 (d) Statement 1 and 3	1
10.	The primary key is selected from the set of _____ (a) Composite keys (b) Determinants (c) Candidate keys (d) Foreign keys	1
11.	Which of the following functions do you use to write data in the binary format? (a) write() (b) output() (c) dump() (d) send()	1
12.	In SQL, which command is used to change a table's structure/characteristics? (a) ALTER TABLE (b) MODIFY TABLE (c) CHANGE TABLE (d) DESCRIBE TABLE	1
13.	Your school has four branches spread across the city. A computer network created by connecting the computers of computer labs of all the school branches, is an example of _____. (a) LAN (b) MAN (c) WAN (d) PAN	1
14.	What will be the following expression be evaluated to in Python? print(5*2-5//9+2.0+bool(100)) (a) 11.0 (b) 13.0 (c) 112.0	1



	(d) 100	
15.	Which clause is used with “aggregate functions” ? (a) GROUP BY (b) SELECT (c) WHERE (d) Both (a) and (c)	1
16.	To fetch one record from the result set, you may use <cursor>_____ method: (a) fetch() (b) fetchone() (c) fetchsingle() (d) fetchtuple()	1
Q17 and 18 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 but R is False (d) A is false but R is True		
17.	Assertion (A); Binary file is faster than text file, so it is mostly used for storing data.  Reasoning (R): Text file stores less characters as compared to the binary file.	1
18.	Assertion (A); A variable is still valid if it is not defined inside the function. The values defined in global scope can be used.  Reasoning (R): Python used LEGB rule to resolve the scope of a variable.	1
<b>SECTION B</b>		
19.	Sumit is trying to write a program to find the factorial of a number passed to the function and he has written the following code but it’s not working and producing errors. Help Sumit to correct this and rewrite the corrected code. Also underline the corrections made.  Def prime (num): factorial = 1 if num < 0: print("Sorry, factorial does not exist for negative numbers") else num == 0 print("The factorial of 0 is 1") else: for i in range(1,num + 1): factorial = factorial*i print("The factorial of",num,"is",factorial)	2
20.	What is the difference between a hub and a switch? <b>OR</b> Differentiate between Bus Topology and Star Topology of Networks. What are the advantages and disadvantages of Star Topology over Bus Topology ?	2
21.	(a) Convert the following for loop into while loop:  name = ‘ Karim Benzema’ for index in range(len(name)): print(name[index].upper(),end=’’)	2

	<p>(b) Write the output of the following code given below:</p> <pre>Marks = {'Sidhi':65,'Prakul':62,'Suchitra':64,'Prashant':50} newMarks = {'Suchitra':66,'Arun':55,'Prashant':49} Marks.update(newMarks) for key,value in Marks.items():     print(key,'scored',value,'marks in Pre Board',end= ' ')     if(value&lt;55):         print('and needs improvement'end='.')</pre> <p style="text-align: center;">print()</p>																	
22.	Explain Referential Integrity in a Relational Database Management System. Why DBMS is better than File System.	2																
23.	<p>(a) Write full forms of the following:</p> <p>(i) SMTP</p> <p>(ii) IMAP</p> <p>(b) What is MAC address?</p>	2																
24.	<p>Predict the output of the Python code given below:</p> <pre>def change(A):     S=0     for i in range(len(A)//2):         S+=(A[i]*2)     return S B = [10,11,12,30,32,34,35,38,40,2] C = change(B) print('Output is',C)</pre> <p style="text-align: center;">OR</p> <pre>Data = ["P",20,"R",10,"S",30] Times = 0 Alpha = "" Add = 0 for C in range(1,6,2):     Times = Times + C     Alpha = Alpha + Data[C-1]+"\$"     Add = Add + Data[C] print (Times,Add,Alpha)</pre>	2																
25.	<p>What is the difference between CHAR and VARCHAR ? Write 2-3 differences.</p> <p style="text-align: center;">OR</p> <p>Differentiate between a Candidate Key and Alternate Key.</p>	2																
<b>SECTION C</b>																		
26.	<p>(a) Consider the following tables CUSTOMER and TRANSACTION:</p> <p style="text-align: center;"><b>Table: CUSTOMER</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>ACNO</th> <th>NAME</th> <th>GENDER</th> <th>BALANCE</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>RISHABH</td> <td>M</td> <td>15000</td> </tr> <tr> <td>C2</td> <td>AAKASH</td> <td>M</td> <td>12500</td> </tr> <tr> <td>C3</td> <td>INDIRA</td> <td>F</td> <td>9750</td> </tr> </tbody> </table>	ACNO	NAME	GENDER	BALANCE	C1	RISHABH	M	15000	C2	AAKASH	M	12500	C3	INDIRA	F	9750	1+2
ACNO	NAME	GENDER	BALANCE															
C1	RISHABH	M	15000															
C2	AAKASH	M	12500															
C3	INDIRA	F	9750															

**Table: TRANSACTIONS**

ACNO	TDATE	AMOUNT	TYPE
C1	2022-07-21	1000	DEBIT
C2	2022-08-31	1500	CREDIT
C3	2022-09-15	2000	CREDIT

What will be the output of the following statement?

SELECT NAME, TDATE, AMOUNT FROM CUSTOMER C, TRANSACTION T WHERE C.ACNO = T.ACNO AND TYPE = 'CREDIT';

(b) Write the output of the queries (i) to (iv) based on the tables, ACCOUNT and TRANSACT given below:

**Table: ACCOUNT**

ANO	ANAME	ADDRESS
101	Nirja Singh	Bangalore
102	Rohan Gupta	Chennai
103	Ali Reza	Hyderabad
104	Rishabh Jain	Chennai
105	Simran Kaur	Chandigarh

**Table: TRANSACT**

TRNO	ANO	AMOUNT	TYPE	DOT
T001	101	2500	Withdraw	2017-12-21
T002	103	3000	Deposit	2017-06-01
T003	102	2000	Withdraw	2017-05-12
T004	103	1000	Deposit	2017-10-22
T005	101	12000	Deposit	<b>2017-11-06</b>

- (i) SELECT ANO, ANAME FROM ACCOUNT WHERE ADDRESS NOT IN ('CHENNAI', 'BANGALORE');
- (ii) SELECT DISTINCT ANO FROM TRANSACT;
- (iii) SELECT ANO, COUNT(\*), MIN(AMOUNT) FROM TRANSACT GROUP BY ANO HAVING COUNT(\*) > 1;
- (iv) SELECT COUNT(\*), SUM(AMOUNT) FROM TRANSACT WHERE DOT <= '2017-06-01';

27. Write the definition of a function ChangeGender() in Python, which reads the contents of a text file "BIOPICT.TXT" and displays the content of the file with every occurrence of the word 'he' replaced by 'she'. For example,

if the content of the file "BIOPICT.TXT" is as follows :

3

*Last time he went to Agra,  
there was too much crowd, which he did not like.  
So this time he decided to visit some hill station.*

The function should read the file content and display the output as follows:

*Last time she went to Agra,  
there was too much crowd, which she did not like.  
So this time she decided to visit some hill station.*

OR

Write a method/function BIGWORDS() in Python to read contents from a text file CODE.TXT, to count and display the occurrence of those words, which are having 5 or more alphabets.

For example :

If the content of the file is

*ME AND MY FRIENDS*

*ENSURE SAFETY AND SECURITY OF EVERYONE*

The method/function should display

*Count of big words is 5*

28. (a) Write the outputs of the SQL queries (i) to (iv) based on the relations TRAINS and PASSANGERS given below:

3

**Table: TRAINS**

TNO	TNAME	START	END
11096	Ahimsa Express	Pune Junction	Ahmedabad Junction
12015	Ajmer Shatabdi	New Delhi	Ajmer Junction
1651	Pune Hbj Special	Pune Junction	Habibganj
13005	Amritsar Mail	Howrah Junction	Amritsar Junction
12002	Bhopal Shatabdi	New Delhi	Habibganj
12417	Prayag Raj Express	Allahabad Junction	New Delhi

**Table: PASSANGERS**

PNR	TNO	PNAME	GENDER	AGE	TRAVELDATE
P001	13005	R N AGRAWAL	MALE	45	2018-12-25
P002	12015	P TIWARY	MALE	28	2018-11-10
P003	12015	S TIWARY	FEMALE	22	2018-11-10
P004	12030	S K SAXENA	MALE	42	2018-10-12
P005	12030	S SAXENA	FEMALE	35	2018-10-12
P006	12030	P SAXENA	FEMALE	12	2018-10-12

- (i) SELECT DISTINCT TRAVELDATE FROM PASSENGERS;  
(ii) SELECT MIN (TRAVELDATE), MAX (TRAVELDATE) FROM PASSENGERS  
WHERE GENDER = 'MALE';  
(iii) SELECT START, COUNT(\*) FROM TRAINS GROUP BY START HAVING COUNT  
(\*)>1;  
(iv) SELECT TNAME, PNAME FROM TRAINS T, PASSENGERS P WHERE T.TNO =

	P.TNO AND AGE BETWEEN 40 AND 50;  (b) Write a query/command to display the structure of a table.	
29.	Define a function <b>ZeroEnding(SCORES)</b> to add all those values in the list of SCORES, which are ending with zero (0) and display the sum. For example : If the SCORES contain [200, 456, 300, 100, 234, 678] The sum should be displayed as 600	3
30.	A list contains following record of a student: [student_name, marks, subject] Write the following user defined functions to perform given operations on the stack named 'status': (i) Push_element() - To Push an object containing name and marks of a student who scored more than 75 marks in 'CS' to the stack (ii) Pop_element() - To Pop the objects from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack. For example: If the lists of customer details are:  ["Danish",80,"Maths"] ["Hazik",79,"CS"] ["Parnik",95,"Bio"] ["Danish",70,"CS"] ["Sidhi",99,"CS"]  The stack should contain ["Hazik","79"] ["Sidhi","99"]  The output should be:  ["Hazik","79"] ["Sidhi","99"] Stack Empty  <b>OR</b>  Write a function in Python, Push(emp) where , <b>emp</b> is a dictionary containing the details of employees – {empname:salary}. The function should push the names of those employees in the stack who have salary less than 15000. Also display the count of elements pushed into the stack. For example:  If the dictionary contains the following data:  Employee ={"Sohan":20000,"Mohan":9000,"Rohan":25000,"Aman":5000} The stack should contain Mohan Aman  The output should be: The count of elements in the stack is 2	3
<b>SECTION D</b>		

31. Ayurveda Training Educational Institute is setting up its centre in Hyderabad with four specialised 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.  
You, as a network expert, have to answer the queries as raised by them in (i) to (iv).

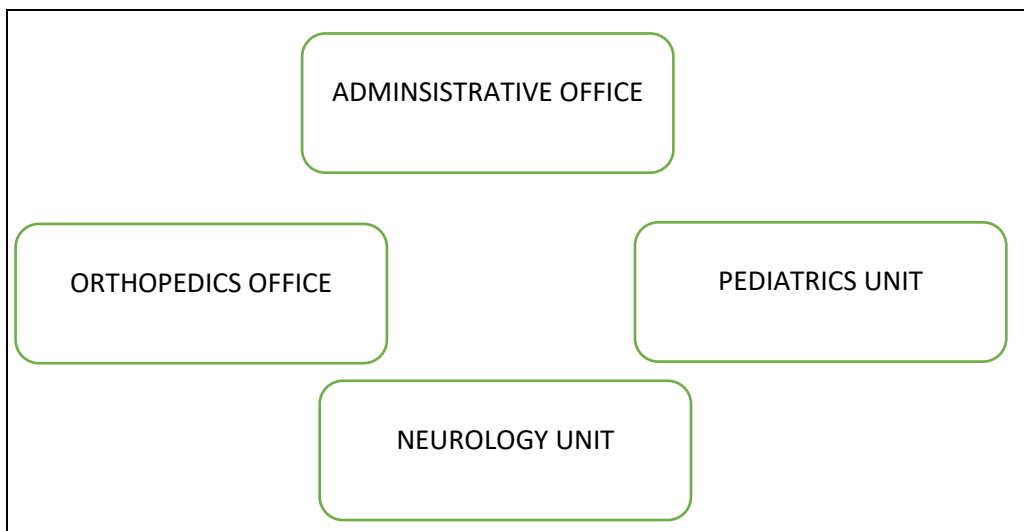
5

Shortest distances between various locations in metres :

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

Number of Computers installed at various locations are as follows

Pediatrics Unit	40
Administrative Office	140
Neurology	50
Orthopedics Unit	80



- (i) Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
- (ii) Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.
- (iii) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following:
  - Switch
  - Gateway
- (iv) Suggest a device/software to be installed in the given network to take care of data security.
- (v) Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable :

32. (a) Write the output of the code given below: 2+3

```
def myfunction(str1):
    rstr1 = ""
    index = len(str1)
    while index>0:
        if str1[index-1].isalpha():
            rstr1+=str1[index-1]
        index = index-1
    return rstr1
print(myfunction('1234abcd'))
```

(b)

The code given below updates the record of table EMP by increasing salary by 1000Rs. of all those employees who are getting less than 80000Rs.

empno – integer  
empname – string  
salary – float

Note the following to establish connectivity between Python and MYSQL:

Username is root  
Password is admin  
The table exists in a MYSQL database named abcinfo.

Write the following missing statements to complete the code:

Statement 1 – to form the cursor object

Statement 2 – to update the records as mentioned in the question

Statement 3- to add the record permanently in the database

```
import mysql.connector as ms
db1 = ms.connect(host='localhost',user='root',passwd='admin',database='abcinfo')
cur = _____ #Statement 1
sql = 'UPDATE _____', #Statement 2
_____ #Statement 3
print('Data Updated successfully')
```

**OR**

(a) 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 ? Also specify the maximum and minimum value that can be assigned to the variable R when K is assigned value as 2.

```
import random
Signal = [ 'Stop', 'Wait', 'Go' ]
for K in range(2, 0, -1):
    R = random.randrange(K)
    print (Signal[R], end = ' # ')
```

- (a) Stop # Wait # Go #
- (b) Wait # Stop #
- (c) Go # Wait #
- (d) Go # Stop #

	<p>(b) The code given below inserts the following record in the table employee:  empID – integer  empName – string  salary – float  dept – sting</p> <p>Note the following to establish connectivity between Python and MYSQL:</p> <ul style="list-style-type: none"> <li>• Username is root</li> <li>• Password is admin</li> <li>• The table exists in a MYSQL database named empdata.</li> <li>• The details (empID, empName, salary and dept) are to be accepted from the user.</li> </ul> <p>Write the following missing statements to complete the code:  Statement 1 – to form the cursor object  Statement 2 – to execute the command that inserts the record in the table Student.  Statement 3- to add the record permanently in the database</p> <pre>import mysql.connector as mysql def sql_data():     con1=mysql.connect(host="localhost",user="root",password="admin",     database="empdata")     mycursor=_____ #Statement 1     empID =int(input("Enter employee ID :: "))     empName=input("Enter employee name :: ")     salary =float(input("Enter salary :: "))     dept= input("Enter department :: ")     query="insert into employee     values({},'{}',{},{}).format(empID,empName,salary,dept)     _____ #Statement 2     _____ # Statement 3     print("Data Added successfully")</pre>	
33.	<p>What is the full form of CSV?  Write a Program in Python that defines and calls the following user defined functions:  A csv file "PLANTS.csv" has structure [ID, NAME, PRICE].</p> <ul style="list-style-type: none"> <li>• WRITEREC() - to input data for records from the user and write them to the file PLANTS.csv. Each record consists of a list with field elements as ID, NAME and PRICE to store plant id, plant name and price respectively</li> <li>• SHOWHIGH() - To read the records of PLANTS.csv and displays those records for which the PRICE is more than 500.</li> </ul> <p style="text-align: center;">OR</p> <p>What is the difference between a text file and a binary file?  Write a Program in Python that defines and calls the following user defined functions:  A csv file "PATIENTS.csv" has structure [PID, NAME, DISEASE].  Write the definition of a function countrec() in Python that would read contents of the file "PATIENTS.csv" and display the details of those patients who have the DISEASE as 'COVID-19'. The function should also display the total number of such patients whose DISEASE is 'COVID-19'.</p>	5
<b>SECTION E</b>		
34.	Pravesh is a database administrator for a company and has created the following table:	1+1+2



**Table: MOVIEDetails**

MOVIEID	TITLE	LANGUAGE	RATING	PLATFORM
M001	Minari	Korean	5	Netflix
M004	MGR Magar	Tamil	4	Hotstar
M010	Kaagaz	Hindi	3	Zee 5
M011	Harry Potter	English	4	Prime Video
M015	Uri	Hindi	5	Zee5
M020	Avengers: Endgame	English	4	Hotstar

- (a) Identify the degree and cardinality of the table.  
 (b) Which field should be made the primary key? Justify your answer.  
 (c) Write the statements to:  
 (i) Delete the Records where the rating is less than 4  
 (ii) Update the rating of Movie having ID as M020 to 5.

**OR**

- (c) Write the statements to  
 (i) Add another column called Recommended having default value of 'Recommended'.  
 (ii) Increase the ratings of all Hindi movies by 1.

35. Aaruni Shah is learning to work with Binary files in python using a process known as pickling/de-pickling. Her teacher has given her the following incomplete code, which is creating a binary file named Mydata.dat and then opens, reads and displays the content of the created files.

```

_____ #Fill_Line 1
sqlist = list()
for k in range(10):
    sqlist.append(k*k)
fout = _____ #Fill_Line2A
_____ #Fill_Line3
fout.close()
fin = _____ #Fill_Line2B
_____ #Fill_Line4
fin.close()
print("Data from file:",mylist)
    
```

Help her complete the above code as per the instructions given below:

- (a) Complete Fill\_Line1 so that the required Python library becomes available to the program.  
 (b) Complete Fill\_Line2A so that the above mentioned binary file is opened for writing in the file object fout.  
 Similarly, complete Fill\_Line2B, which will open the same binary file for reading in the file object fin.  
 (c) Complete Fill\_Line3 so that the list created in the code, namely Sqlist is written in the open file.  
 (d) Complete Fill\_Line4 so that the contents of the open file in the file handle fin are read in a list named mylist.

4

CLASS – XII

Subject: COMPUTER SCIENCE

Maximum Marks: 70

Time Allotted: 3 hours

**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

<b>SECTION A</b>		
1.	State weather True or False: “ The expression $2^{**}2^{**}3$ is evaluated as $(2^{**}2)^{**}3$ .	1
2.	Evaluate the following expression and identify the correct answer. $16 - (4 + 2) * 5 + 2^{**}3 * 4$ a. 54 b. 46 c. 18 d. 32	1
3.	What gets printed when the following code is executed? <pre>names = ['Hasan', 'Balwant', 'Sean', 'Dia'] print(names[-1][-1])</pre> (a) h (b) n (c) a (d) Dia	1
4.	Which among the following operators has the highest precedence? a)+ b)% c)  d)**	1
5.	Which of the following is not a valid identifier ? a) ABC b) _num c) Prints d)4map	1
6.	To use randint(a,b) which of the following module should be imported ? a)math b)random c)CSV d)randinteger()	1

7.	What will be the output when the following code is executed? L= [1,3,5,4,8,9] print(L[-1:-5])	1
8.	Central computer which is powerful than other computers in the network is called a) Hub b) Sender c) Switch d) Server	1
9.	Method used to force python to write the contents of file buffer on to storage file is a) count() b) read() c) flush() d) True	1
10.	In a range function, which of the following argument is mandatory to pass: a) Start b) Stop c) Step d) All of these	1
11.	Fill in the blank: _____ is the protocol used to send emails to the e-mail server and _____ is the protocol used to download mail to the client computer from the server. (a) SMTP,POP (b) HTTP,POP (c) FTP,TELNET (d) HTTP,IMAP	1
12	Which of the following is a DDL command? a) SELECT b) ALTER c) INSERT d) UPDATE	1
13.	Which of the following is not a function / method of csv module in Python? a. read() b. reader() c. writer() d. writerow()	1
14.	Syntax of seek function in Python is myfile.seek(offset, reference_point) where myfile is the file object. What is the default value of reference_point? a. 0 b. 1 c. 2 d. 3	1
15.	Which of the following character acts as default delimiter in a csv file? a. (colon) : b. (hyphen) - c. (comma) , d. (vertical line)	1
16.	Fill in the blank: _____ is the method used in python while interfacing the SQL with Python to save the changes permanently to the database while inserting or modifying the records. (a) save() (b) commit() (c) final() (d) lock()	1

<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>(a) Both A and R are true and R is the correct explanation for A</p> <p>(b) Both A and R are true and R is not the correct explanation for A</p> <p>(c) A is True but R is False</p> <p>(d) A is false but R is True</p>		
17.	<p><b>Assertion (A):</b> When passing a mutable sequence as an argument, function modifies the original copy of the sequence.</p> <p><b>Reasoning (R):</b> Function can alter mutable sequences passes to it.</p>	1
18.	<p><b>Assertion (A):</b> with statement can be used to open a file and should be preferred over other ways to open a file.</p> <p><b>Reasoning (R):</b> with statement is a block of statement that makes sure the file is closed in case of any run-time error and buffer is cleared to avoid data loss.</p>	1
<p><b>SECTION B</b></p>		
19.	<p>Consider the following code written by a programming student. The student is a beginner and has made few errors in the code. You are required to rewrite the code after correcting it and underline the corrections.</p> <pre> Def swap(d):     n = {}     values = d.values()     keys = list(d.keys[])     k = 0     for i in values         n(i) = keys[k]         k+=1     return n result = swap({'a':1,'b':2,'c':3}) print(result) </pre>	2
20.	<p>What are cookies in a web browser ? Write one advantage and one disadvantage of enabling cookies in a web browser.</p> <p style="text-align: center;">OR</p> <p>What is the difference between client side and server side scripting?</p>	2
21.	<p>(a) Consider the given Python string declaration:</p> <pre>mystring = 'Programming is Fun'</pre> <p>Write the output of: <code>print(mystring[-50:10:2].swapcase())</code></p> <p>(b) Write the output of the code given below:</p> <pre> a,b,c,d = (1,2,3,4) mytuple = (a,b,c,d)*2+(5**2,) print(len(mytuple)+2) </pre>	2
22.	<p>What do you mean by DDL and DML commands in DBMS? Write examples of each.</p>	2
23.	<p>(a) Write the full forms of the following:</p> <p>(i) WLAN</p> <p>(ii) WWW</p> <p>(b) What is a hub? What are its types?</p>	2
24.	<p>Predict the output of the following code:</p>	2

```
def my_func(var1=100, var2=200):
    var1+=10
    var2 = var2 - 10
    return var1+var2
print(my_func(50),my_func())
```

OR

```
value = 50
def display(N):
    global value
    value = 25
    if N%7==0:
        value = value + N
    else:
        value = value - N
print(value, end="#")
display(20)
print(value)
```

25. Differentiate between a PRIMARY KEY and UNIQUE constraint in SQL with appropriate example.

2

OR

What is the difference between WHERE and HAVING clause? Can we use them together in a query?

### SECTION C

26. (a) Consider the following tables STORE and SUPPLIERS:

1+2

Table: STORE

ItemNo	Item	Scode	Qty	Rate	LastBuy
2005	Sharpner Classic	23	60	8	31-Jun-09
2003	Ball Pen 0.25	22	50	25	01-Feb-10
2002	Gel Pen Premium	21	150	12	24-Feb-10
2006	Gel Pen Classic	21	250	20	11-Mar-09
2001	Eraser Small	22	220	6	19-Jan-09
2004	Eraser Big	22	110	8	02-Dec-09
2009	Ball Pen 0.5	31	180	18	03-Nov-09

**Table: SUPPLIERS**

Score	Sname
21	Premium Stationers
23	Soft Plastics
22	Tetra Supply

What will be the output of the following statement?

```
SELECT * FROM STORE JOIN SUPPLIERS ON STORE.Score = SUPPLIERS.Score;
```

(b) Write the output of the queries (i) to (iv) based on the tables, ITEM and CUSTOMER given below:

**Table: ITEM**

I_ID	ItemName	Manufacturer	Price
PC01	Personal Computer	ABC	35000
LC05	Laptop	ABC	55000
PC03	Personal Computer	XYZ	32000
PC06	Personal Computer	COMP	37000
LC03	Laptop	PQR	57000

**Table: CUSTOMER**

C_ID	CustomerName	City	I_ID
01	N Roy	Delhi	LC03
06	H Singh	Mumbai	PC03
12	R Pandey	Delhi	PC06
15	C Sarma	Delhi	LC03
16	K Agarwal	Bangalore	PC01

- (i) SELECT DISTINCT City FROM Customer;
- (ii) SELECT ItemName, MAX(Price), Count(\*) FROM Item GROUP BY ItemName;
- (iii) SELECT CustomerName, Manufacturer FROM Item, Customer WHERE Item.I\_ID = Customer.I\_ID;
- (iv) SELECT ItemName, Price\*100 FROM Item WHERE Manufacturer = 'ABC';

27. Write a method in python to read lines from a text file INDIA.TXT, to find and display the occurrence of the word "INDIA" or "India".  
For example:  
If the content of the file is

3

INDIA is a famous country all over the world.

Geographically, India is located to the south of Asia continent. India is a high population country and well protected from all directions naturally.

India is a famous country for its great cultural and traditional values all across the world.

The output should be 4

OR

Write a method/function BIGLINES() in Python to read lines from a text file CONTENT.TXT, and display those lines, which are bigger than 20 characters.

For example :

If the content of the file is

*Stay positive and happy*

*Work hard and dont give up hope*

*Be open to criticism and keep learning*

*Surround yourself with happy, warm and genuine people*

The method/function should display

*Be open to criticism and keep learning*

*Surround yourself with happy, warm and genuine people*

28. a) Write the outputs of the SQL queries (i) to (iv) based on the relations SENDER and RECIPIENT below:

3

**Table: SENDER**

SenderID	SenderName	SenderAddress	SenderCity
ND01	R Jain	2, ABC Appts	New Delhi
MU02	H Sinha	12, Newtown	Mumbai
MU15	S Jha	27/A, Park Street	Mumbai
ND50	T Prashad	122-K, SDA	New Delhi

**Table: RECIPIENT**

RecID	SenderID	RecName	RecAddress	RecCity
KO05	ND01	R Bajpayee	5, Central Avenue	Kolkata
ND08	MU02	S Mahajan	116, A Vihar	New Delhi
MU19	ND01	H Singh	2A, Andheri West	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminus	Mumbai
ND48	ND50	S Tripathy	13, B1 D, Mayur Vihar	New Delhi

(i) SELECT DISTINCT SenderCity FROM Sender;

	<p>(ii) SELECT A.SenderName, B.RecName FROM Sender A, Recipient B WHERE A.SenderID = B.SenderID AND B.RecCity = 'Mumbai';</p> <p>(iii) SELECT RecName, RecAddress FROM Recipient WHERE RecCity NOT IN ('Mumbai', 'Kolkata');</p> <p>(iv) SELECT RecID, RecName FROM Recipient WHERE SenderID = 'MU02' OR SenderID = 'ND50';</p>	
29.	<p>Write a Python function SwitchOver(Val) to swap the even and odd positions of the values in the list Val.</p> <p><i>Note</i> : Assuming that the list has even number of values in it.</p> <p>For example :</p> <p>If the list Numbers contain [25,17,19,13,12,15]</p> <p>After swapping the list content should be displayed as [17,25,13,19,15,12]</p>	3
30.	<p>Write the definition of a user defined function PushNV(N) which accepts a list of strings in the parameters N and pushes all strings which have no vowels present in it, into a list named NoVowel.</p> <p>Write a program in python to input 5 words and push them one by one into a list named All.</p> <p>The program should then use the function PushNV() to create a stack of words in the list NoVowel so that it stores only those words which do not have any vowels in it, from the list All.</p> <p>Thereafter , pop each word from the list NoVowel and display the message "EmptyStack"</p> <p>For example:</p> <p>If the words accepted and pushed into the list All are ['DRY','LIKE','RHYTHM','WORK','GYM']</p> <p>Then the stack NoVowel should store ['DRY','RHYTHM','GYM']</p> <p>And the output should be displayed as GYM RHYTHM DRY EmptyStack</p> <p style="text-align: center;">OR</p> <p>Write the definition of a user defined function Push3_5(N) which accepts a list of integers in a parameter N and pushes all those integers which are divisible by 3 or</p>	3



divisible by 5 from the list N into a list named Only3\_5.

Write a program in Python to input 5 integers into a list named NUM.

The program should then use the function Push 3\_5() to create the stack of the list Only3\_5. Thereafter pop each integer from the list Only3\_5 and display the popped value. When the list is empty, display the message "StackEmpty".

For example:

If the integers input into the list NUM are:

[10, 6, 14, 18, 30]

Then the stack Only3\_5 should store

[10, 6, 18, 30]

And the output should be displayed as

30 18 6 10 StackEmpty

31. Piccadilly Design and Training Institute is setting up its centre in Jodhpur with four specialised units for Design, Media, HR and Training in separate buildings. The physical distances between these units and the number of computers to be installed in these units are given as follows. You as a network expert, have to answer the queries as raised by the administrator as given in (i) to (iv).

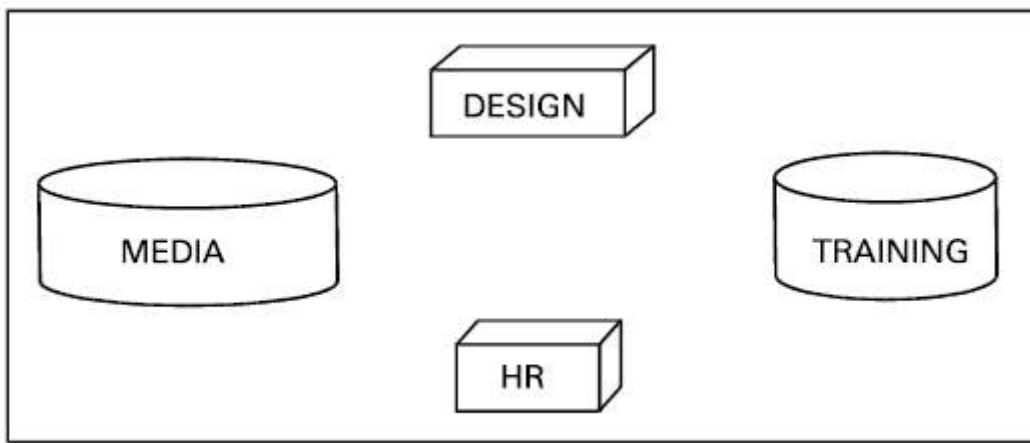
Shortest distances between various locations in metres :

Design Unit to Media Unit	60
Design Unit to HR Unit	40
Design Unit to Training Unit	60
Media Unit to Training Unit	100
Media Unit to HR Unit	50
Training Unit to HR Unit	60

Number of computers installed at various locations are as follows :

Design Unit	40
Media Unit	50
HR Unit	110
Training Unit	40

5



- i) Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
- (ii) Suggest by drawing the best cable layout for effective network connectivity of the building having server with all the other units.
- (iii) Suggest the devices to be installed in each of these buildings for connecting computers installed within each of the units out of the following :  
Modem, Switch, Gateway, Router
- (iv) Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable :  
Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.
- (v) Suggest a protocol that shall be needed to provide Video Conferencing solution between Jodhpur and HQ which is situated in Delhi.

32.

(a) Write the output of the code given below:

```
def ChangeVal(M,N):
    for i in range(N):
        if M[i]%5 == 0:
            M[i] //= 5
        if M[i]%3 == 0:
            M[i] //= 3
L=[25,8,75,12]
ChangeVal(L,4)
for i in L :
    print(i, end='#')
```

(b) The code given below is trying to delete the record of table **category of database items** that have the name = 'Stockable'

Note the following to establish connectivity between Python and MYSQL:  
Username is learner  
Password is fast

Write the following missing statements to complete the code:  
Statement 1 – to form the cursor object  
Statement 2 – to delete the records as mentioned in the question  
Statement 3- to save the changes permanently in the database

```
import mysql.connector as ms
```

2+3

```

db1 =
ms.connect(host='localhost',user='learner',passwd='fast',database='items')
cur = _____ #Statement 1
sql = 'DELETE _____' #Statement 2
cur.execute(sql)
_____ #Statement 3
print('Data Updated successfully')

```

OR

(a) Find the output of the following code:

```

Name="PythoN3.1"
R=""
for x in range(len(Name)):
    if Name[x].isupper():
        R=R+Name[x].lower()
    elif Name[x].islower():
        R=R+Name[x].upper()
    elif Name[x].isdigit():
        R=R+Name[x-1]
    else:
        R=R+"#"
print(R)

```

(b) **The code given below reads the following record from the table named teacher and displays only those records whose year of retirement is in 2022.**

**empcode – integer**

**Name – string**

**post – integer**

**dateofretire – integer**

**Note the following to establish connectivity between Python and MYSQL:**

Username is root

Password is kvs

The table exists in a MYSQL database named school.

Write the following missing statements to complete the code:

Statement 1 – to import the required modules and give alias as ms

Statement 2 – to execute the query that extracts records of those teachers whose year of retirement is 2022. Consider the date format to be 'YYYY-MM-DD'

Statement 3- to fetch all the data from the cursor instance

```

import _____ as _____ #Statement 1
con1=ms.connect(host="localhost",user="root",password="kvs", database="school")
mycursor= con1.cursor()
print("Teachers about to retire in 2022 are: ")
_____ #Statement 2
data=_____ #Statement 3
for i in data:
    print(i)
print()

```

33. What is the difference between 'w' and 'a' file modes used in the open() function?  
Write a program in python that defines and calls the following user defined

5

functions:

- (I) addCsvFile(UserName,Password) – To accept and add the login details of a user into the CSV file 'login.csv'. Each record consist of a list with field elements as [id,pass] to store Username and password respectively.
- (II) checkDetails(username,pass) – To check the login details passed to the fnction from the file. If the details are correct the function returns True otherwise it returns False.

OR

Name the methods used to read and write the data in a binary file.

Write a program in python that defines and calls the following user defined functions:

- (i) insertData() – To accept and add data of a customer and add it to a csv file 'customerData.csv'. Each record should contain a list consisting customername,mobileno,dateofPurchase,itempurchased.
- (ii) frequency (name) – To accept the name of a customer and search how many times the customer has purchased any item. The count and return the number.

SECTION E

34 Consider the following table HOSPITAL. Answer the questions that follows the table:

Table: HOSPITAL

No.	Name	Age	Department	Dateofadm	Charges	Sex
1	Arpit	62	Surgery	21/01/98	3000	M
2	Zarina	22	ENT	12/12/97	2000	F
3	Kareem	32	Orthopaedic	19/02/98	1500	M
4	Arun	12	Surgery	11/01/98	3000	M
5	Zubin	30	ENT	12/01/98	1500	F
6	Ketaki	16	ENT	24/02/98	2000	M
7	Ankita	29	Cardiology	20/02/98	10000	F
8	Zareen	45	Cardiology	14/07/99	1400	F
9	Kushi	19	Gynaecology	20/01/22	1800	F
10	Shilpa	23	Nuclear Medicine	19/05/22	2500	F

Based on the data given above answer the following questions:

- (i) Identify the columns which can be considered as candidate keys.
- (ii) What is the degree and cardinality of the above table.
- (iii) Write the statements to:
  - (a) Delete the record where the Name starts with 'Z'
  - (b) Modify the Charges of Ankita from 10000 to 1000.

OR

- (iii) Write the statements to:
  - (a) To check the structure of the given table.
  - (b) To increase the age of everyone by 2 years.

35 Sunil is a Python programmer. He has written the following incomplete code, which

takes a students details (rollnumber,name

```
import pickle
```

```
sturno = int(input("Enter roll number :"))
```

```
stuname = input("Enter name:")
```

```
stumarks = float(input("Enter marks :"))
```

```
Stul = {"RollNo. ":sturno, "Name": stuname, "Marks":stumarks}
```

```
with _____ as fh: # Fill_Line 1
```

```
_____ # Fill_Line 2
```

```
_____ as fin: #Fill_Line 3
```

```
_____ #Fill_Line 4  
print(Rstu)
```

```
if Rstu["Marks"] >= 85:
```

```
    print("Eligible for merit certificate")
```

```
else:
```

```
    print("Not eligible for merit certificate")
```

Help Sunil to complete the code as per the following instructions.

- (a) Complete Fill\_Line1 so that the mentioned binary file is opened for writing in fh object using a with statement.
- (b) Complete Fill Line2 so that the dictionary Stul's contents are written on the file opened in step (a).
- (c) Complete Fill\_Line3 so that the earlier created binary file is opened for reading in a file object namely fin, using a with statement.
- (d) Complete Fill\_Line4 so that the contents of open file in fin are read into a dictionary namely Rstu.

**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**  
**SAMPLE PAPER SET-10**

**Class: XII Session**

**SUBJECT : Computer Science(083)**

**TIME : 3 HOURS**

**MM : 70**

General Instructions:

1. This question paper contains five sections, Section A to E
2. All questions are compulsory.
3. Section A have 18 questions carrying 01 marks each.
4. Section B has 07 very Short Answer type question carrying 02 marks each
5. Section C has 05 Short Answer type question carrying 03 marks each.
6. Section D has 03 Long Answer types question carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each . One internal choice is given in Q35 against part C only
8. All Programming questions are to be answered using python Language only.

SECTION A		
1	Which of the following in not a valid variable name in python? (i) Peacock (iii) Pea Cock (ii) Peacock5 (iv) Peacock_	1
2	Write the type of tokens from the following: (i) if (ii) roll_no	1
3.	If the following code is executed, what will be the output of the following code? <pre>name="IlovelyCountry" print(name[3:10])</pre>	1
4.	<b>Find and write the output of the following Python code:</b> <pre>def Change(P ,Q=40):     P=P+Q     Q=P-Q     print( P,"#",Q)     return (P)  R=100 S=200 R=Change(R,S) print(R,"#",S) S=Change(S)</pre>	1
5.	Select the correct output of the following code	1

	<p>Fp.seek(5,1)</p> <p>a) Move file pointer five character ahead from the current position  b) Move file pointer five character ahead from the beginning of a file  c) Move file pointer five character behind from the current position  d) Move file pointer five character behind ahead from the end of a file</p>	
6.	<p>Select the correct method to write a list of lines to a file</p> <p>a) write(list)  b) writelines(list)  c) writelist(list)  d) None</p>	1
7.	<p>Select the correct output of the following string operations</p> <pre>mystring = "Pynative" stringList = [ "abc", "Pynative", "xyz" ] print(stringList[1] == mystring) print(stringList[1] is mystring)</pre> <p>a) True      b) False      c) False      d) True  False      True      False      True</p>	1
8.	<p>What will be the output of the following Python code snippet?</p> <pre>D1={"John":40 , "Peter" : 45} D2= { "John": 466, "Peter" : 45} Print(D1&gt;D2)</pre> <p>a) True    b) False    c) Error    d) Non</p>	1
9	<p>Write a python command to create list of keys from a dictionary.</p> <pre>dict={'a':'A', 'b':'B', 'c':'C', 'd':'D'}</pre> <p>a) dict.keys()    b) keys()    c) key.dict()    d) None of these</p>	1
10.	<p>The role of the statement  'cursor=db.cursor' is:</p> <p>a) Create an instance of a cursor  b) Move cursor row wise</p>	1

	<p>c) Connects cursor to database</p> <p>d) Prepare cursor to move</p>	
11.	<p>.....is a set of attributes in a relation , for which no two tuples in a relation state have the same combination of values.</p> <p>a) Super Key</p> <p>b) Candidate Key</p> <p>c) Primary Key</p> <p>d) All of the above</p>	1
12	<p>Evaluate the following expressions:</p> <p>10 &gt; 5 and 7 &gt; 12 or not 18 &gt; 3</p> <p>a) Ture    b) Flase    C) 25    D) 0</p>	1
13	<p>The SELECT statement when combined with .....clause,return records without reption.</p> <p>a) NULL</p> <p>b)UNIQUE</p> <p>c)DESCRIBE</p> <p>d) DISTINCT</p>	1
14	<p>Consider the following query:</p> <p>SELECT name FROM class WHERE subject.....NULL;</p> <p>Which comparison operator may be used to fill the blank space in above query?</p> <p>a) =        b)LIKE        c)IS        d)IS NOT</p>	1
15.	<p>Which portion of the URL below records the directory or folder of the desired resource?</p> <p><a href="https://www.nishantsingh.com/ghagwal/pgt.htm">https://www.nishantsingh.com/ghagwal/pgt.htm</a></p> <p>a) http    b) ghagwal    c) <a href="http://www.nishantsingh.com">www.nishantsingh.com</a>    d) pgt.htm</p>	1
16	<p>.....Protocol is used to send the email to another email user.</p> <p>a) FTP    b)POP    c) IMAP    d) SMTP</p>	1
<p>Q17 and Q18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>a) Both A and R are true and R is the correct explanation for A</p> <p>b) Both A and R are true and R is not the correct explanation for A</p> <p>c) A is True but R is False</p> <p>d) A is false but R is True</p>		



17	<p>Assertion (A):- Key word arguments are related to function calls.</p> <p>Reasoning(R ):- When you use keyword arguments in funation call, the caller identifies the arguments by the parameter name.</p>	1
18	<p>Assertion(A) : The tell method will stores/get the current location of the file pointer.</p> <p>Reasoning(R): Python seek method returns the current position of the file read/write pointer with the file.</p>	1
Section B		
19.	<p>Mr. Akash has written a code , His code is having errors , Rewrite the correct code and underline the correction s made.</p> <pre> 5x=input("Enter a number") If(abs(x)=x):     Print("You Entered a positive number..") Else:     x=x-1     print("Number made positive:"x) </pre>	2
20	<p>Differentiate between default parameter(s) and keyword parameter(s) with a suitable example for each.</p> <p style="text-align: center;">Or</p> <p>What is the difference between Local Variable and Global Variable?</p>	2
21	<p>a) If the following code is executed, what will be the output of the following code?</p> <pre> mystr1 = 'Sequence with labels' mystr2 = '\$' print(mystr2*6+mystr1+mystr2*5) </pre> <p>b) <b>What will be the output of the following code snippet?</b></p> <pre> init_tuple_a =( 'a', '3') init_tuple_b = ('sum', '4') print (init_tuple_a + init_tuple_b) </pre>	1
22.	<p>What is the purpose of the following clauses in a select statement?</p> <p>a) ORDER BY    b) HAVING</p>	2
23.	<p>What is the full forms of the following :</p> <p>a) IMAP                  b) POP</p>	2

24.	Predict the output of the python code given below:- <pre> def changedata(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) changedata("Kvs_nishant@2023") </pre>	2
25	Study the following program and select the possible output(s) from options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to variable Y. <pre> import random X= random.random() Y= random.randint(0,4) print(int(X),":",Y+int(X)) </pre> (i) 0 : 0      (ii) 1 : 6      (iii) 2 : 4      (iv) 0 : 3	2

Section c

26	Write the outputs of the SQL queries (i) to (iii) based on the given tables: <p style="text-align: center;"><b>Watches</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Watchid</th> <th>Watch_name</th> <th>Price</th> <th>Type</th> <th>Qty_store</th> </tr> </thead> <tbody> <tr> <td>W001</td> <td>High Time</td> <td>10000</td> <td>Ladies</td> <td>100</td> </tr> <tr> <td>W002</td> <td>Life Time</td> <td>15000</td> <td>Gents</td> <td>150</td> </tr> <tr> <td>W003</td> <td>Wave</td> <td>12500</td> <td>Ladies</td> <td>200</td> </tr> <tr> <td>W004</td> <td>High Fashion</td> <td>13500</td> <td>Ladies</td> <td>135</td> </tr> <tr> <td>W005</td> <td>Golden Time</td> <td>14000</td> <td>Unisex</td> <td>150</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Sale</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Watchid</th> <th>Qty_sold</th> <th>Quarter</th> </tr> </thead> <tbody> <tr> <td>W001</td> <td>10</td> <td>1</td> </tr> <tr> <td>W002</td> <td>8</td> <td>2</td> </tr> <tr> <td>W003</td> <td>15</td> <td>1</td> </tr> <tr> <td>W001</td> <td>12</td> <td>3</td> </tr> <tr> <td>W003</td> <td>11</td> <td>2</td> </tr> <tr> <td>W004</td> <td>9</td> <td>1</td> </tr> <tr> <td>W002</td> <td>15</td> <td>1</td> </tr> </tbody> </table> <p>i. SELECT MAX (PRICE), MIN(QTY_STORE) FROM WATCHES;</p> <p>ii. SELECT QUARTER, SUM(QTY SOLD) FROM SALE GROUP BY QUARTER;</p> <p>iii. SELECT WATCH_NAME, QTY_STORE, SUM (QTY_SOLD) FROM WATCHES W, SALE S WHERE W. WATCHID = S.WATCHID GROUP BY S.WATCHID;</p>	Watchid	Watch_name	Price	Type	Qty_store	W001	High Time	10000	Ladies	100	W002	Life Time	15000	Gents	150	W003	Wave	12500	Ladies	200	W004	High Fashion	13500	Ladies	135	W005	Golden Time	14000	Unisex	150	Watchid	Qty_sold	Quarter	W001	10	1	W002	8	2	W003	15	1	W001	12	3	W003	11	2	W004	9	1	W002	15	1	3
Watchid	Watch_name	Price	Type	Qty_store																																																				
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W002	15	1																																																						
27	Assume that a text file named TEXT1.TXT already contains some text written	3																																																						

into it ,write a function named COPY(),that reads the file TEXT1.TXT and create a new file named TEXT2.TXT ,which shall contain only those words from the file TEXT1.TXT which don't start with an uppercase vowel(i.e. with 'A','E','I','O','U') ,for example if the file TEXT1.TXT contains

**He can appoint any member of the Lok Sabha**

then the file TEXT2.TXT shall contain

**He can member of the Lok Sabha**

**OR**

write a function countmy() in python to read the text file "DATA.TXT" and count the number of times "my" occurs in the file

28 Write the outputs of the SQL queries (i) to (iii) based on the relations VEHICLE and TRAVEL given below:

VCODE	VEHICLETYPE	PERKM
V01	VOLVO BUS	150
V02	AC DELUX BUS	125
V03	ORDINARY BUS	80
V04	CAR	18
V05	SUV	30

**NOTE: PERKM is fright charges per kilometer**

Table: TRAVEL

CNO	CNAME	TRAVELDATE	KM	VCODE	NOP
101	K. Niwal	2015-12-13	200	V01	32
103	Fredrick Sym	2016-03-21	120	V03	45
105	Hitesh Jain	2016-04-23	450	V02	42
102	Ravi Anish	2016-01-13	80	V02	40
107	John Malina	2015-02-10	65	V04	2
104	Sahanubhuti	2016-01-28	90	V05	4
106	Ramesh Jaya	2016-04-06	100	V01	25

NOTE: KM is Kilometres travelled and NOP is number of passengers travelled in vehicle.

a) SELECT COUNT(\*), VCODE FROM TRAVEL  
GROUP BY VCODE HAVING COUNT(\*)>1;

b)SELECT VCODE,CNAME,VEHICLETYPE FROM TRAVEL A, VEHICLE B  
WHERE A.VCODE=B.VCODE AND KM<90;

c)SELECT DISTINCT VCODE FROM TRAVEL;

29 **Write a python Function that accepts a string and calculates the number of uppercase letters and lowercase letters.**  
Sample String : Python ProgrammiNg  
Expected Output:  
Original String : Python ProgrammiNg  
No. of Upper case characters : 3  
No. of Lower case characters :14

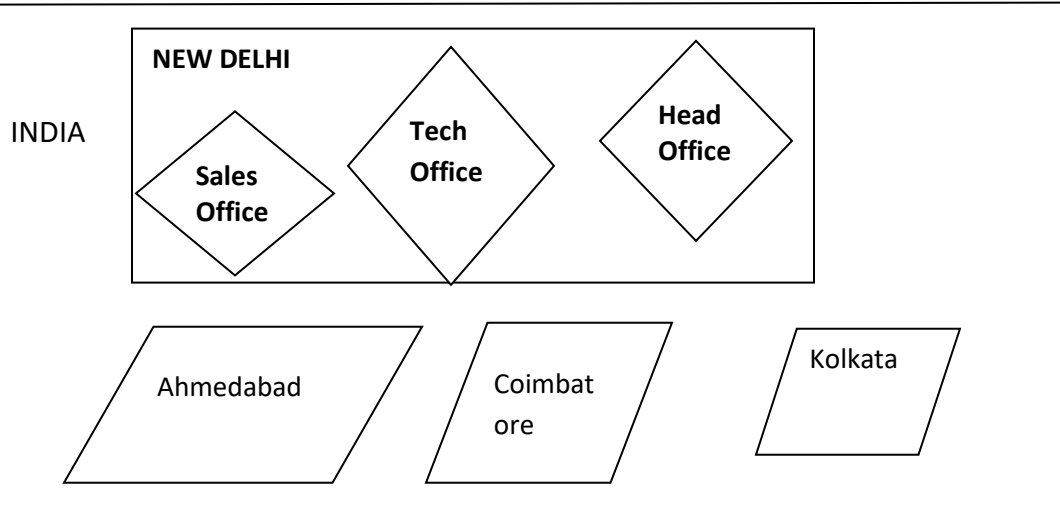
30 Write PushOn(Student) and Pop(Student) methods/functions in Python to add a new Student and delete a Student from a list of Student Name, considering them to act as push and pop operations of the Stack data structure.

31

Hindustan connecting world Association is planning to start their offices in four major cities in India to provide regional IT infrastructure support in the field of Education And Culture . The company has planned to setup their head office in New Delhi in three location and have name their New Delhi office as “Sales Office”, “Head Office” and “Tech Office”. The company’s regional offices are loacated in “Coimbatore”, “Kolkata”, and “Ahmedabad”.

A rought layout of the same ia as follows

5



Approximate distance between these office as per network survey team is as follows:

Place From	Place TO	Distance
Head Office	Sales Office	10 km
Head Office	Tech Office	70 mtr
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 expert have planned to install the following number of computer in each of their offices:

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

a) Suggest network type for connecting each of the following set of their offices:

- Head Office and Tech Office
- Head Office and Coimbatore Office

b) Which device you will suggest to be produced by the company for connecting all the computers with in each of their offices out of the following device?

- i) Switch/Hub ii)Modem iii)Telephone

c) Which of the following communication media, you will suggest to be procured by th company for connecting their local offices in New Delhi for very effective and fast communication.

- i) Telephone Cable ii) Optical fibre iii) Ethernet cable

	d) 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 office at "Kolkata","Coimbatore and "Ahmedabad".	
32	Write a function in python, PushEl(element) and MakeEl(element) to add a new element and delete a element from a List of element Description, considering them to act as push and pop operations of the Stack data structure . Or Write a function in Python PUSH(A), where A is a list of numbers. From this list push all even numbers into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message	5
33	Write a function countVowels() in Python, which should read each character of a text file "myfile.txt", count the number of vowels and display the count. Example:If the "myfile.txt" contents are as follows: This is my first class on Computer Science. The output of the function should be: Count of vowels in file: 10	5

Section E

34	<p>Consider the following tables MobileMaster and MobileStock. Write SQL commands for the statements (i) to (v) .</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5">Table: MobileMaster</th> </tr> <tr> <th>M_Id</th> <th>M_Company</th> <th>M_Name</th> <th>M_Price</th> <th>M_Mf_Date</th> </tr> </thead> <tbody> <tr> <td>MB001</td> <td>Samsung</td> <td>Galaxy</td> <td>4500</td> <td>23-Jan-2004</td> </tr> <tr> <td>MB003</td> <td>Nokia</td> <td>N1100</td> <td>2250</td> <td>12-Dec-2003</td> </tr> <tr> <td>MB004</td> <td>Micromax</td> <td>Unite3</td> <td>4500</td> <td>14-Feb-2004</td> </tr> <tr> <td>MB005</td> <td>Sony</td> <td>XperiaM</td> <td>7500</td> <td>01-Jan-2004</td> </tr> <tr> <td>MB006</td> <td>Oppo</td> <td>SelfieEx</td> <td>8500</td> <td>19-Mar-2004</td> </tr> </tbody> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">Table: MobileStock</th> </tr> <tr> <th>S_Id</th> <th>M_Id</th> <th>M_Qty</th> <th>M_Supplier</th> </tr> </thead> <tbody> <tr> <td>S001</td> <td>MB004</td> <td>450</td> <td>New Vision</td> </tr> <tr> <td>S002</td> <td>MB003</td> <td>250</td> <td>Praveen Gallery</td> </tr> <tr> <td>S003</td> <td>MB001</td> <td>300</td> <td>Classic Mobile Store</td> </tr> <tr> <td>S004</td> <td>MB006</td> <td>150</td> <td>A-one-Mobiles</td> </tr> <tr> <td>S005</td> <td>MB003</td> <td>150</td> <td>The Mobile</td> </tr> <tr> <td>S006</td> <td>MB006</td> <td>50</td> <td>Mobile Centre</td> </tr> </tbody> </table>	Table: MobileMaster					M_Id	M_Company	M_Name	M_Price	M_Mf_Date	MB001	Samsung	Galaxy	4500	23-Jan-2004	MB003	Nokia	N1100	2250	12-Dec-2003	MB004	Micromax	Unite3	4500	14-Feb-2004	MB005	Sony	XperiaM	7500	01-Jan-2004	MB006	Oppo	SelfieEx	8500	19-Mar-2004	Table: MobileStock				S_Id	M_Id	M_Qty	M_Supplier	S001	MB004	450	New Vision	S002	MB003	250	Praveen Gallery	S003	MB001	300	Classic Mobile Store	S004	MB006	150	A-one-Mobiles	S005	MB003	150	The Mobile	S006	MB006	50	Mobile Centre	5
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S006	MB006	50	Mobile Centre																																																																		
	<p>i)Display the Mobile company, Mobile Name &amp; Price in descending order of their manufacturing date.</p> <p>ii)List the details of mobile whose name starts with s</p> <p>iii)Display the mobile supplier and quantity of all mobiles except MB003.</p> <p>iv) Display the name of mobile company having price between 3000 and 5000</p> <p>v) Display the name of company, supplier and Price by joining the joining the two tables where price is more than 5000.</p>																																																																				
35	Pushpa writing a program to create a CSV file "item.csv" which will contain item name, Price and quantity of some entries. He has written the following code. As	5																																																																			

	<p>a programmer, help him to successfully execute the given task.</p> <pre> import _____ # Line def addInCsv(item,price,qty): # to write / add data into the CSV file     f=open(' item.csv','_____') # Line     csvFileWriter = csv.writer(f)     csvFileWriter.writerow([item,price,qty])     f.close() #csv file reading code defreadFromCsv(): # to read data from CSV file     with open(' item.csv','r') as csvFile:         newFileReader = csv._____(csvFile) # Line         for row in newFileReader:             print (row[0],row[1],row[2])         csvFile._____ # Line addInCsv('Note Book',45,100) addInCsv('Text Book',60,150)  addInCsv('Ball Pen',10,100) addInCsv('Pencil', 5,200)  readFromCsv() #Line </pre>	
	<p>(a) Name the module he should import in Line 1.</p> <p>(b) In which mode, Pushpa should open the file to add data into the file</p> <p>(c) Fill in the blank in Line 3 to read the data from a csv file.</p> <p>(d) Fill in the blank in Line 4 to close the file.</p> <p>(e) Write the output he will obtain while executing Line 5.</p>	

**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**  
**SAMPLE PAPER SET-11**

**Class: XII Session**  
**TIME : 3 HOURS**

**SUBJECT : Compute Science(083)**  
**MM : 70**

**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

<b>SECTION A</b>		
1.	State True or False The value of the expression $5/(6*(4-2))$ and $5/6*(4-2)$ is the same.	1
2.	Which of the following is the data type of value, returned by input( ) method in Python? (a ) Boolean      (b) String      (c) Int      (d) Float	1
3.	Given the following dictionaries  Dict1={'Tuple': 'immutable', 'List': 'mutable', 'Dictionary': 'mutable', 'String': 'immutable'}  Which of the following will delete key:value pair for key='Dictionary' in the above mentioned dictionary? a . del Dict1['Dictinary'] b . Dict1['Dictionary'].delete( ) c . delete (Dict1.["Dictionary"]) d . del(Dict1.['Dictionary'])	1
4.	Consider the given expression: print(2**5+8//3*7-2) Which of the following will be correct output if the given expression evaluated? (a) 44 (b) 34 (c) 42 (d) 36	1
5.	Select the correct output of the code: L1, L2 = [10, 23, 36, 45, 78], [ ] for i in range : 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]	1

	(D) [ ] @ [78, 45, 36, 23, 10]	
6	If a file is opened for writing, which of the following statement is false (a) If the file exists at the specified path, the file is successfully opened. (b) Python gives error if the file does not exist at the specified path. (c) The existing contents of the file will be erased as soon as you open the file. (d) Python will create a new empty file at the specified path if the file does not exist at the specified path.	1
7	A column added via ALTER TABLE command initially contains _____ value for all existing rows.	1
8	Which of the following is the correct command to delete an attribute Salary from relation Employee. (A) DELETE SALARY FROM EMPLOYEE; (B) ALTER TABLE EMPLOYEE DELETE SALARY; (C) ALTER TABLE EMPLOYEE DROP SALARY; (D) DROP COLUMN SALARY FROM EMPLOYEE;	1
9	To include integrity constraint in an existing relation, we should use _____ statement.  (A) UPDATE TABLE (B) ALTER TABLE (C) MODIFY TABLE (D) EDIT TABLE	1
10.	The operator _____ when used with a string and an integer gives an error.	1
11	What is the significance of the seek method ? (A) It seeks the absolute path of the file. (B) It tells the current byte position of the file pointer within the file. (C) It places the file pointer at a desired offset within the file (D) It seeks the entire content of the file.	1
12	The syntax of seek( ) method in Python is :- File.object.seek(offset [, reference point]) In the above syntax the offset refers to :- (A) Specifying Initial position of the file pointer. (B) Specifying number of bytes. (C) Specifying file opening mode. (D) None of the above	1
13.	The _____ is a networking device that regenerates or recreates a weak signal into its original strength and form.	1
14	What will be the output of the following Python code ? T1= ( ) T2=T1 * 2 print(len(T2))  (A) 0 (B) 2 (C) 1 (D) Error	1
15	All aggregate function except _____ ignore NULL values in order to produce the output. (A) AVG( ) (B) COUNT( ) (C) COUNT(*) (D) TOTAL( )	1



16	To establish a connection between Python and SQL database, connect() method is used. Identify the correct syntax of connect( ) method from the followings. (A) Connect(user="user name", passwd="password", host="host name", database= "database name") (B) Connect(host="host name", user="user name", password="password", database= "database name") (C) Connect(host="host name", user="user name", passwd="password", database= "database name") (D) Connect(host="host name", database= "database name", user="user name", password="password")	1
Q17 and 18 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 and R is True.		
17	<b>Assertion (A)</b> : A function is a block of organized and reusable code that is used to perform a single related action. <b>Reason (R)</b> : Function provides better modularity for your application and a high degree of code reusability.	1
18	<b>Assertion (A)</b> : Text file stores information in ASCII or Unicode characters. <b>Reason (R)</b> : CSV stands for comma separated value. These files are common file format for transferring and storing data.	1
<b>SECTION B</b>		
19	Anshika has written a code to calculate the factorial value of a number, but her code is having some errors. Rewrite the correct code and underline the corrections made.  <pre>def Factorial(Num)     1=fact     While num=&gt;0:         fact=fact*num         num=-1     print("Factorial value is =",fact)</pre>	2
20.	Differentiate between Viruses and Worms in context of networking and data communication threats.  <p style="text-align: center;"><b>OR</b></p> Differentiate between Web server and web browser. Write any two popular web browsers.	2
21	(A) Given is a Python List declaration : L1=[11,23,16,28,55,37,61,89] write the output of the code given below : print(L1[-3:8]) (B) Given is a Python Dictionary : Lib={"Novel":152,"Magzine":20,"Newspaper":10,"Books":250} Write Python statement to delete key:value pair for key="Novels".	1     1
22	What is the difference between UNIQUE and PRIMARY KEY constraints in an RDBMS.	2
23	(A) Expand the following terms :- (I) FTP (II) GSM (B) Danish has to share the data among various computers of his two offices branches situated in the same city. Name the type of network which is being formed in this process.	1   1

24	<p>Predict the output of the Python code given below:</p> <pre>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-2023 Exams")</pre> <p style="text-align: center;"><b>OR</b></p> <pre>Mydict={} Mydict[(1,2,3)]=12 Mydict[(4,5,6)]=20 Mydict[(1,2)]=25 total=0 for i in Mydict:     total=total+Mydict[i] print(total) print(Mydict)</pre>	2
----	---	---

25	<p>Define the following terms in context with RDBMS:-          (I) Degree            (II) Cardinality</p> <p style="text-align: center;"><b>OR</b></p> <p>Write the full form of DDL and DML. Also write any two examples of DDL and DML.</p>	2
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**SECTION C**

26	<p>(A) Consider the following tables – Employee and Department</p> <p style="text-align: center;"><b>EMPLOYEE</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Ecode</th> <th style="width: 70%;">Ename</th> </tr> </thead> <tbody> <tr><td>M01</td><td>Bhavya</td></tr> <tr><td>M02</td><td>Krish</td></tr> <tr><td>S01</td><td>Mehul</td></tr> <tr><td>S03</td><td>Sanket</td></tr> <tr><td>A05</td><td>Vansh</td></tr> <tr><td>H03</td><td>Pallavi</td></tr> </tbody> </table> <p style="text-align: center;"><b>DEPARTMENT</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Ecode</th> <th style="width: 70%;">Department</th> </tr> </thead> <tbody> <tr><td>M01</td><td>Marketing</td></tr> <tr><td>S01</td><td>Sales</td></tr> <tr><td>A05</td><td>Accounts</td></tr> <tr><td>H03</td><td>HR</td></tr> </tbody> </table> <p>What will be the output of the following statement?  <b>SELECT E.Ecode,E.Ename,D. Department FROM EMPLOYEE E,          DEPARTMENT D WHERE E.Ecode = D.Ecode;</b></p> <p>(B) Write the output of the queries (i) to (iv) based on the table PRODUCT and</p>	Ecode	Ename	M01	Bhavya	M02	Krish	S01	Mehul	S03	Sanket	A05	Vansh	H03	Pallavi	Ecode	Department	M01	Marketing	S01	Sales	A05	Accounts	H03	HR	1+2
Ecode	Ename																									
M01	Bhavya																									
M02	Krish																									
S01	Mehul																									
S03	Sanket																									
A05	Vansh																									
H03	Pallavi																									
Ecode	Department																									
M01	Marketing																									
S01	Sales																									
A05	Accounts																									
H03	HR																									

CUSTOMER given below :

### PRODUCT

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

### CUSTOMER

C_ID	C_Name	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	TP01

i. SELECT P\_Name, count(\*) FROM Product GROUP BY P\_Name;

ii. SELECT Max(Price), Min(Price) FROM Product;

iii. SELECT Product.P\_Name, Client.C\_Name FROM Product, Client WHERE Product.P\_ID = Client.P\_ID AND Client.City="Mumbai";

iv. SELECT P.P\_Id, P.P\_Name, C.C\_Name, C.City, P.Price FROM Product P, Client C WHERE Product.P\_ID = Client.P\_ID AND Client.City="Mumbai" ORDER BY P.Price DESC.;

27 Write a method COUNT\_UPPER() in Python to read lines from Text File "CONTENT.TXT" and display the count of uppercase alphabets in the File.

3

Example :

If the file contents are as follows:-

All India Senior Secondary Certificate Examination.

The COUNT\_UPPER() function should display the output as :

The number of uppercase alphabets in the file :- 6

**OR**

Write a method COUNT\_WORD() in Python to read lines from a text file "PLEDGE.TXT" and count and display the occurrences of the word "country" in the file.

Example :-

If the content of the file are as follows :-

India is my country and all Indians are my brothers and sisters. I love my country and I am proud of its rich and varied heritage. I shall always strive to be worthy

	<p>of it.</p> <p>I shall give respect to my parents, teachers and elders and treat everyone with courtesy.</p> <p>To my country and my people, I pledge my devotion. In their well being and prosperity alone, lies my happiness.</p> <p>The COUNT_WORD() function should display the output as : Total Occurrences of word "country" = 3</p>																																																				
28	<p>(A) Write the outputs of the SQL queries (i) to (iv) based on the relations CAR and OWNER given below:-</p> <p style="text-align: center;"><b>CAR</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>C_code</th> <th>Carname</th> <th>Make</th> <th>Color</th> <th>Capacity</th> <th>Charges</th> </tr> </thead> <tbody> <tr> <td>501</td> <td>Ignis</td> <td>Suzuki</td> <td>Blue</td> <td>5</td> <td>14</td> </tr> <tr> <td>503</td> <td>Saltoz</td> <td>Tata</td> <td>White</td> <td>5</td> <td>16</td> </tr> <tr> <td>502</td> <td>Innova</td> <td>Toyota</td> <td>Silver</td> <td>7</td> <td>18</td> </tr> <tr> <td>509</td> <td>SX4</td> <td>Suzuki</td> <td>Black</td> <td>5</td> <td>20</td> </tr> <tr> <td>510</td> <td>NIOS</td> <td>Hyundai</td> <td>Grey</td> <td>5</td> <td>15</td> </tr> </tbody> </table> <p style="text-align: center;"><b>CUSTOMER</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>C_Id</th> <th>Cname</th> <th>C_code</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>Vansh Sharma</td> <td>501</td> </tr> <tr> <td>1002</td> <td>Shivanand</td> <td>509</td> </tr> <tr> <td>1003</td> <td>Tanish Sharma</td> <td>503</td> </tr> <tr> <td>1004</td> <td>Palak</td> <td>502</td> </tr> </tbody> </table> <p>(i) SELECT COUNT(DISTINCT Make) FROM CAR;  (ii) SELECT MAX(Charges), MIN(Charges) FROM CAR;  (iii) SELECT COUNT(*), Make FROM CAR;  (iv) SELECT Carname FROM CAR WHERE Capacity=7;</p> <p>(B) Write SQL Command to show the list of all the databases.</p>	C_code	Carname	Make	Color	Capacity	Charges	501	Ignis	Suzuki	Blue	5	14	503	Saltoz	Tata	White	5	16	502	Innova	Toyota	Silver	7	18	509	SX4	Suzuki	Black	5	20	510	NIOS	Hyundai	Grey	5	15	C_Id	Cname	C_code	1001	Vansh Sharma	501	1002	Shivanand	509	1003	Tanish Sharma	503	1004	Palak	502	2+1
C_code	Carname	Make	Color	Capacity	Charges																																																
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29	<p>Write a function R_Shift(Arr,n) in Python, which accepts a list Arr of numbers and n is a numeric value by which all elements of the list are shifted to right and the last element removed should be added in the beginning.</p> <p>Sample Input Data of the list  Arr=[ 1,2,3,4,5,6], n=2  Output  Arr = [5, 6, 1, 2, 3, 4]</p>	3																																																			
30.	<p>A List contains following record of a Book :</p> <p>[Book Name, Write Name, Price]</p> <p>Write the following user defined functions to perform given operations on the stack named "BOOK" :</p> <p>(i) Push_Rec( ) – To push the record containing Book name and author name of Books having price &gt; 500 to the stack.  (ii) Pop_Rec( ) – To pop the objects from the stack and display them. Also display "STACK UNDERFLOW" when there are no elements in the Stack.</p> <p>OR</p> <p>Write a function in Python, Push(Item) where Item is a list containing the details of Bakery Items – [[Name, Price], [Name, Price], [Name, Price]]  The function should push the names of those items in the Stack who have price less than Rs. 50. Also display the count of elements pushed into the Stack.  Example:</p>	3																																																			

	<p>If the list contains the following items :  <code>l=[['ravi',26],['raman',36], ['chaman',56]]</code>  The Stack should contain :  Ravi  Raman  The output should be :  The number of elements in stack is : 2</p>	
31	<p>Rising Sun Corporation is a professional IT company. The company is planning to set up their new offices in India with its hub at Hyderabad. The company has 03 Block named Conference Block, Finance Block, and Human Resource Block. Suggest them the best available solutions based on the queries (i) to (v) as mentioned below :</p> <p>Block to Clock distance in Meters :</p> <ul style="list-style-type: none"> <li>• Human Resource to Conference Block – 55 mtr.</li> <li>• Human Resource to Finance – 110 mtr</li> <li>• Conference to Finance – 90 mtr.</li> </ul> <p>No. of computers to be installed in each block :-</p> <ul style="list-style-type: none"> <li>• Human Resource – 150</li> <li>• Finance - 45</li> <li>• Conference – 75</li> </ul> <p>(i) What will be the most appropriate block, where RSC should plan to house the server? 1</p> <p>(ii) Suggest the cable layout to connect all the buildings in the most appropriate manner for efficient communication. 1</p> <p>(iii) What will be the best suitable connectivity out of the following to connect the offices in Bangalore with its New York based office. 1  (a) Infrared (b) Satellite Link (c) Ethernet Cable</p> <p>(iv) Suggest the placement of the following devices with justification. 1  (a) Hub / Switch (b) Repeater</p> <p>(v) Which service / protocol will be most helpful to conduct the live interactions of Experts from New York to Human Resource Block. 1</p>	
32	<p>(A) Write the output of the Python code given below :</p> <pre> a=10 def fun(x=10,y=5):     global a     a=y+x-3     print(a,end="@") i=20 j=4 fun(i,j) fun(y=10,x=5) </pre> <p>(B) The code given below inserts the following record in the table Employee:</p> <p>ECode – Integer  EName – String  Deptt – String  Salary – Float</p> <p>Note the following to establish connectivity between Python and MYSQL :</p> <ul style="list-style-type: none"> <li>• Username is admin</li> <li>• Password is Hello123</li> </ul>	2+3

- Database is KVS
- The Department of the employee will be entered by the user in order to get the list of employees in the department.

Write the following missing statements to complete the code:

Statement 1 – To form the cursor object.

Statement 2 – To execute the command that searches for the employee code in the table Employee.

Statement 3 – To show all the records returned by the query.

```
import mysql.connector as con
```

```
def Emp_data():
```

```
    mycon=con.connect(host="localhost",user="admin",passwd="Hello123",database="KVS")
```

```
    mycursor=_____ # Statement 1
```

```
    Dept=input("Enter Department name to be searched for =")
```

```
    Qry_Str="Select * from Employee where deptt="+Dept
```

```
    _____ # Statement 2
```

```
    Mydata=_____ # Statement 3
```

```
    for row in Mydata:
```

```
        print(row)
```

```
    mycon.close()
```

OR

(A) Predict the output of the code given below:

```
x=[1,2,3]
ctr=0
while ctr<len(x):
    print(x[ctr]*'#')
    for y in x:
        print(y*'$ ')
    ctr+=1
```

(B) The code given below reads the following record from the table named "SALES" and update those records who have Sale>50000 in order to provide commission 4% of Sale amount.

Scode – integer

Sname- String

Saleamt – Float

Commission – Float

Note the following to establish connectivity between Python and MySQL :

- Username is root
- Password is Scott
- Database Name : Company

Write the following missing statements to complete the code :

Statement 1 – to form the cursor object

	<p>Statement 2 – to execute the query to update the commission column as 4% of Saleamount for those records only who have Sale&gt;50000. Statement 3 – to add the data permanently in the database.</p> <pre> import mysql.connector as con  def Sale_data():     mycon=con.connect(host="localhost",user="root",passwd="Scott",data base="Company")     mycursor=_____ # Statement 1     Qry_Str="Update SALES set commission = Saleamt*4/100 where Saleamt&gt;50000;"     _____ # Statement 2     _____ # Statement 3     mycon.close() </pre>																															
33	<p>What is a reader object in CSV files? Write a program in Python that defines and calls the following user defined functions:-</p> <p>(a) AddUser() – to accept and the username and password to a CSV file "Users.CSV". Each record consists of a list with field elements as UID and PWD to store User ID and Password respectively. (b) Search() – To search and display the password of the given User ID.</p> <p>OR</p> <p>(a) What is a CSV file? (b) Write a program in Python that defines and calls the following user defined functions: WriteCSV() – to accept RollNo, Name and Marks of a student from the user and Write it to CSV file. ReadCSV() – To read the contents from the CSV file and display it to the user.</p>	5																														
34.	<p>Karan creates a table GAMES with a set of records to store the details of Games like Name of Game, Type of Game, Prize Money etc. as given below. After creation of the table, he has entered some records as shown below :</p> <table border="1" data-bbox="288 1608 1337 1854"> <thead> <tr> <th>GCode</th> <th>GName</th> <th>Type</th> <th>PrizeMoney</th> <th>ScheduleDate</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Badminton</td> <td>Outdoor</td> <td>15000</td> <td>10-Oct-2021</td> </tr> <tr> <td>102</td> <td>Chess</td> <td>Indoor</td> <td>20000</td> <td>01-JUL-2020</td> </tr> <tr> <td>103</td> <td>Table Tennis</td> <td>Indoor</td> <td>10000</td> <td>01-Mar-2022</td> </tr> <tr> <td>104</td> <td>Carom Board</td> <td>Indoor</td> <td>8000</td> <td>15-AUG-2023</td> </tr> <tr> <td>105</td> <td>Cricket</td> <td>Outdoor</td> <td>25000</td> <td>01-DEC-2022</td> </tr> </tbody> </table> <p>Based on the data given above answer the following questions :-</p> <p>(i) Identify the column which could be considered as PRIMARY KEY. (ii) What will be the degree and Cardinality of the above table?</p>	GCode	GName	Type	PrizeMoney	ScheduleDate	101	Badminton	Outdoor	15000	10-Oct-2021	102	Chess	Indoor	20000	01-JUL-2020	103	Table Tennis	Indoor	10000	01-Mar-2022	104	Carom Board	Indoor	8000	15-AUG-2023	105	Cricket	Outdoor	25000	01-DEC-2022	1+1+2
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**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**  
**SAMPLE PAPER SET-12**

**Class: XII Session**  
**TIME : 3 HOURS**

**SUBJECT : Computer Science(083)**  
**MM : 70**

**-----General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

<b>SECTION-A</b>		
Q.1	Which of the following are in-valid operators in Python? (A) +=                      (B) ^                      (C) =+                      (D) &&	<b>1</b>
Q.2	Which function is used to remove the given characters from trailing end i.e. right end of a string? (A) strip( )                      (B) remove( )                      (C) lstrip( )                      (D)rstrip( )	<b>1</b>
Q.3	Predict the output of following python code. SS="PYTHON" print( SS[:3:]) (A) THON                      (B) PYT                      (C) PYTH                      (D) HON	<b>1</b>
Q.4	A Python List is declared as Stud_Name = ['Aditya', 'aman', 'Aditi','abhay'] What will be the value of min(Stud_Name)? (A) abhay                      (B) Aditya                      (C) Aditi                      (D) aman	<b>1</b>
Q.5	Choose the correct output of following code: Tup=(100) print(Tup*3) (A) (300,)                      (B) (100,100,100)                      (C) Syntax Error                      (D) 300	<b>1</b>
Q.6	In a stack, if a user tries to remove an element from empty stack it is called _____ (A) Underflow                      (B) Empty                      (C) Overflow                      (D) Blank	<b>1</b>
Q.7	Which method is used for object serialization in Python? (A) Pickling                      (B) Un-pickling                      (C) Merging                      (D) None of the above	<b>1</b>
Q.8	Which types of arguments/parameters supports by Python?	<b>1</b>

	(A) Positional Argument (C) Keyword (or named) Arguments	(B) Default Arguments (D) All of Above	
Q.9	If a function in python does not have a return statement, which of the following does the function return? (A) int (B) float (C) None (D) Null		1
Q.10	A _____ is a set of rules that governs data communication. (A) Forum (B) Protocol (C) Standard (D) None of the above		1
Q.11	Select correct collection of DDL Command? (A) CREATE, DELETE, ALTER, MODIFY (B) CREATE, DROP, ALTER, UPDATE (C) CREATE, DROP, ALTER, MODIFY (D) CREATE, DELETE, ALTER, UPDATE		1
Q.12	Which statement is used to display the city names without repetition from table Exam? (A) SELECT UNIQUE(city) FROM Exam; (B) SELECT DISTINCT(city) FROM Exam; (C) SELECT PRIMARY(city) FROM Exam; (D) All the above		1
Q.13	Ronak want to show the list of movies which name end with 'No-1'. Select the correct query if table is MOVIE and field attribute is Movie_Name. (A)SELECT Movie_Name FROM MOVIE WHERE Movie_Name = '%No-1'; (B)SELECT Movie_Name FROM MOVIE WHERE Movie_Name = 'No-1%'; (C)SELECT Movie_Name FROM MOVIE WHERE Movie_Name LIKE '%No-1'; (D)SELECT Movie_Name FROM MOVIE WHERE Movie_Name LIKE 'No-1%';		1
Q.14	Which Constraint not allow to enter repeated values in the table? (A)PRIMARY KEY (B) UNIQUE (C) BOTH A and B (D) None of above		1
Q.15	COMMIT command is belongs to (A)DDL Command (B) DML Command (C) TCL Command (D) None of the above		1
Q.16	Which function is used to create a cursor in Python – SQL connectivity? (A)fetch() function (B) execute() function (C) connect() function (D) curse() function		1
<b>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</b> <b>(a) Both A and R are true and R is the correct explanation for A</b> <b>(b) Both A and R are true and R is not the correct explanation for A</b> <b>(c) A is True but R is False</b> <b>(d) A is false but R is True</b>			
Q.17	Assertion (A):- In stack, program should check for Underflow condition, before executing the pop operation. Reasoning (R):- In stack, underflow mean there is no element available in the stack or stack is an empty stack.		1
Q.18	Assertion (A):- The readlines() method in python reads all lines from a text file. Reasoning (R):- The readlines() method returns the tuple of lines(string).		1
<b>SECTION-B</b>			
Q.19	A student has written a code to print a pattern of even numbers with equal intervals. His code is having errors. Rewrite the correct code and underline the corrections made. def pattern(start=0, end, interval):		2

	<pre> for n in range(start: end, interval):     if(n%2==1):         print(n)     else         pass x=int(input("Enter Start Number: ")) y=int(input("Enter End Number: ")) z=int(input("Enter Interval: ")) pattern(x,y,z) </pre>	
Q.20	<p>(A) line="T-20 Cricket World Cup 2022"  x=line[::-1]  print(a[0:4:1][::-1])</p> <p>(B)  India={"Animal":"Tiger","Bird":"Peacock","Flag":"Tri-Color"}  India["Capital"]="New Delhi"  print(India.values())</p>	2
Q.21	<p><b>Find and write the output of the following python code:</b></p> <pre> def Alter(P=15,Q=10):     P=P*Q     Q=P/Q     print(P,"#",Q)     return Q  A=100 B=200 A=Alter(A,B) print(A,"\$",B) B=Alter(B) print(A,"\$",B) </pre>	2
Q.22	<p>Write full form on given abbreviation</p> <p>(i) URL  (ii) SMTP</p>	2
Q.23	<p>Explain the difference between webpage and website with examples of each.</p> <p style="text-align: center;">OR</p> <p>What is the difference between Packet Switching and Circuit Switching?</p>	2
Q.24	<p>What is the role of connect() and rowcount() methods in python.</p>	2
Q.25	<p>What is the importance of UNIQUE constraints in a table? Give a suitable example.</p> <p style="text-align: center;">OR</p> <p>Explain the terms degree and cardinality with example <b>in reference to table.</b></p>	2
	<b>SECTION-C</b>	2
Q.26	<p>Write a method COUNT_WORDS() in Python to read text file 'STUDENT.TXT' and <b>display the total number of Words in the file which start with 'S' and end with 'R'</b>.</p> <p>your output should shown like given below:  No. of word found: .....</p>	
Q.27	<p>Write definition of a function How_Many(List, elm) to count and display number of times the value of elem is present in the List. (Note: don't use the count() function)</p> <p>For example :</p> <p>If the Data contains [205,240,304,205,402,205,104,102] and elem contains 205  The function should display 205 found 3 Times</p>	3

Q.28 Write PUSH\_CITY(cities) and POP\_CITY(cities) methods/functions in Python to add new city name and delete city name from a List of cities, considering them to act as push and pop operations of the Stack data structure.

**OR**

Write a function in Python PUSH\_VAL(val), where val is a list of numbers. From this list push all odd numbers into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate messages.

3

Q.29 Consider the following tables SCHOOL and ADMIN and answer this question :  
Give the output the following SQL queries :

TABLE: SCHOOL					
CODE	TEACHER	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/3/2000	24	10
1009	PRIYA RAI	PHYSICS	03/09/1998	26	12
1203	LIS ANAND	ENGLISH	09/04/2000	27	5
1045	YASHRAJ	MATHS	24/8/2000	24	15
1123	GANAN	PHYSICS	16/7/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
1215	UMESH	PHYSICS	11/05/1998	22	16

TABLE: ADMIN		
CODE	GENDER	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

(A) **SELECT TEACHER, SUBJECT, GENDER FROM SCHOOL , ADMIN  
WHERE SCHOOL.CODE=ADMIN.CODE  
AND  
SCHOOL.EXPERIENCE<5 ;**

(B)

- (i) Select Designation Count (\*) From Admin Group By Designation Having Count (\*) <2;
- (ii) **SELECT max (EXPERIENCE) FROM SCH-OOOL;**
- (iii) **SELECT TEACHER FROM SCHOOL WHERE EXPERIENCE >12 ORDER BY TEACHER;**
- (iv) **SELECT COUNT (\*), GENDER FROM AD-MIN GROUP BY GENDER;**

1

Q.30 Write a output for SQL queries (i) to (iii), which are based on the table: SCHOOL and ADMIN given below: **3**

**TABLE: SCHOOL**

**TABLE: SCHOOL**

CODE	TEACHERNAME	SUBJECT	DOJ	PERIO	EXPERIENC E
1001	RAVI SHANKAR	ENGLISH	12/03/2000	24	10
1009	PRIYA RAI	PHYSICS	03/09/1998	26	12
1203	LISA ANAND	ENGLISH	09/04/2000	27	5
1045	YASHRAJ	MATHS	24/08/2000	24	15
1123	GANAN	PHYSICS	16/07/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
1215	UMESH	PHYSICS	11/05/1998	22	16

**TABLE: ADMIN**

CODE	GENDER	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

- (a) SELECT SUM (PERIODS), SUBJECT FROM SCHOOL GROUP BY SUBJECT;  
 b) SELECT TEACHERNAME, GENDER FROM SCHOOL, ADMIN WHERE DESIGNATION = 'COORDINATOR' AND SCHOOL.CODE=ADMIN.CODE;  
 c) SELECT COUNT (DISTINCT SUBJECT) FROM SCHOOL;

**SECTION-D**

Q.31 Excel Public School, Coimbatore is setting up the network between its different wings of school campus. There are 4 wings namely SENIOR(S), JUNIOR (J), ADMIN (A) and HOSTEL (H). **5**



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

Wing A to Wing S 100m

Wing A to Wing J 200m

Wing A to Wing H 400m

Wing S to Wing J 300m

Wing S to Wing H 100m

Wing J to Wing H 450m

**Number of Computers installed at various wings are as follows:**

**Wings Number of Computers**

Wing A 20

Wing S 150

Wing J 50

Wing H 25

- Suggest the best-wired medium and mention the topology or layout to connect various wings of Excel Public School, Coimbatore.
- Name the most suitable wing to house the server. Justify your answer.
- Suggest placement of HUB/SWITCH in the network of the School.
- Suggest a device that can provide wireless Internet access to all smartphone/laptop users in the campus of Excel Public School, Coimbatore.
- What should be the Network Topology among all blocks of the organization :  
(a) LAN (B) MAN (c) WAN (IV) Any of these

**Q.32 (A). Write the output of following Python code.**

```
def change():
    Str1="WORLD-CUP2022"
    Str2=""
    I=0
    while I<len(Str1):
        if Str1[I]>="A" and Str1[I]<="M":
            Str2=Str2+Str1[I+1]
        elif Str1[I]>="0" and Str1[I]<="9":
            Str2=Str2+(Str1[I-1])
        else:
            Str2=Str2+"*"
        I=I+1
    print (Str2)
change():
```

2  
+  
3

(B). The code given below extract the following record in from the table Emp whose salary is more than Rs. 50000:

EmpNo – integer  
 EmpName – string  
 Age– integer  
 Salary – integer

Note the following to establish connectivity between Python and MYSQL:

- Username is root
- Password is tiger
- The table exists in a MYSQL database named BIG\_COMPANY.
- The details (EmpNo, EmpName, EmpAge and EmpSalary) are to be accepted from the user.

Write the following missing statements to complete the code:

Statement 1 – To create the cursor object

Statement 2 – To execute the command that extract the records of those employees whose salary is greater than Rs. 50000.

Statement 3 -- To store records from cursor to an object named EmpRecord.

import mysql.connector as cntr

def Emp\_Big\_Company():

```

    con=cntr.connect(
        host="localhost",
        user="root",
        password="tiger",
        database="big_company")

```

EmpCursor=\_\_\_\_\_ # Statement 1

print("Display Employee whose salary is more than Rs. 50000:")

\_\_\_\_\_ # Statement 2

EmpRecord=\_\_\_\_\_ #Statement 3

for record in EmpRecord:

print(record)

Q.33 (A) Write any two difference between text file and binary file?

(B) Write a Program in Python that defines and calls the following user defined functions:

Add\_Book():

To accept data of new book and add to 'library.csv' file. The record of book consists book\_id, book\_name and book\_price in form of python list.

Show\_Book():

To read the records of books from 'library.csv' file and display the record of books which price is more than Rs. 500.

### SECTION-E

Q.34 Lovepreet is a senior clerk in a MNC. He creates a table salary with a set of records to keep ready for tax calculation. After creation of the table, he has entered data of 5 employees in the table.

emp_id	emp_name	emp_desig	basic	da	hra	nps
E01	Naveen Roy	Manager	70000	20000	8000	7000
E02	Pawan Ahuja	Junior Clerk	20000	2000	2500	2000
E03	Kalpna Rani	Public Expert	50000	5000	4500	2500
E04	Govind Mishra	Director	90000	40000	11500	900
E05	Seeta Johar	Production Manager	80000	35000	10500	850

Based on the data given above answer the following questions

- (i) Identify the most appropriate Attribute, which can be considered as Primary key. Also mention the degree and cardinality of above table.

4

	<p>(ii) Write SQL Command to drop primary key from emp_id attribute of table.</p> <p>(iii) Write SQL Command to Increase the HRA by 1% of respective basic salary of all employees.</p> <p>(iv) Write SQL Chand to Display the Employee Name and their designation whose basic salary is between 50000 and 80000.</p>	
Q.35	<p>Tarun is a student, who wants to make a python program for Sports Department . He is using binary file operations with the help of two user defined functions/modules.</p> <p><b>(A) New_Entry()</b> to create a binary file called SPORTS.DAT containing sports related material information- item_id, item_name and item_qty.</p> <p><b>(B) Show_Item()</b> to display the item _name and item_qty of items which item_qty less than 5. In case there is no item available that which quantity is less than 5 the function displays message. He has abled to write partial code and has missed out certain statements, so he has left certain queries in lines. You as an expert of Python have to provide the missing statements and other related queries based on the following code of Tarun.</p> <p>Answer any four questions (out of five) from the below mentioned questions.</p> <pre> import pickle def Add_New_Product():     fopen=_____ #1 statement to open the binary file to write     data     while True:         Prod_id = int (input (“Enter Product ID: ”) )         Prod_name = input (“Enter Product Name: ”) )         Prod_price = float (input(“Enter Product Price: ”))         record = [sid, name , age]         _____ #2 statement to write the list record into the file     Choice = input(“Are hou wants to Enter more Records(y/n): ”)         if (Choice.upper() =='N'):             break     fopen.close( ) def Show_Product():     Total = 0     Count_rec = 0     Count_price = 0     with open(“ PRODUCTS.DAT”, “ rb”) as F:         while True:             try:                 Rec=_____ #3 statement to read from the file                 Count_rec = Count_rec+1                 Total = Total+Rec[2]                 if Rec[2] ____ : #4statement product which Prod_price&lt;100                     print (Rec[1],“ price is :”,Rec[2])                     Count_price+ = 1             except:                 break         if Count_price = =0 :             print(“No such product found which price iss less than Rs. 100”)  Add_New_Product() Show_Product() </pre>	4



**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

SECTION-A		
1.	Name the Python library module needed to be imported to invoke following functions: a. floor ( ) b. randint ( )	1
2.	To use function of any module, we have to use _____ (command) before the use of function of a module	1
3.	Identify the key and values from the dictionary given below? a. D = {"Rohan":{"Manager":427, "SBI", 05884 } }	1
4.	Which of the following is/are not assignment operator? a) **=      b) /=      c) ==      d) %=	1
5.	<b>Find the output of the code:</b> num = 7 def func ( ) : num = 27 print(num)	1
6.	Which statement is used to retrieve the current position within the file: a. fp.seek( )      b. fp.tell( )      c. fp.loc      d. fp.pos	1
7.	Clause used in select statement to collect data across multiple records and group the results by one or more columns: a. order by b. group by c. having d. where	1
8.	Which keyword eliminates redundant data from a SQL query result?	1

9.	What does the following code print to console? if True: print(50) else: print(100) a. True    b. False    c.50      d.100	1
10.	Fill in the blank: No. of rows in a relation is called ..... (a) Degree    b. Domain    c. Cardinality    d. Attributes	1
11.	Which of the following is not a correct Python statement to open a test file "Students.txt" to write content into it : a. f= open("Students.txt", 'a') b. f= open("Students.txt", 'w') c. f= open("Students.txt", 'w+') d. f= open("Students.txt", 'A')	1
12.	Fill in the blank: The ..... clause, places condition with aggregate functions . a. HAVING    b. WHERE    c. IN    d.BETWEEN	1
13.	Write the full forms of: a. PPP b. VOIP	1
14.	Find the output: <b>tuple1 = (10,12,14,16,18,20,22,24,30)</b> print( tuple1[5:7] )	1
15.	Which of the following is not an aggregate function? a. AVG    b. MAX    c. JOIN    d.COUNT	1
16.	Name the module used to establish a MySQL database connection with a python program.	1
<b>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</b>		
(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): Dictionaries are enclosed by curly braces { } Reason(R): The key-value pairs are separated by commas ( , )	1
18.	Assertion(A): The random module is a built-in module to generate the pseudo-random variables. Reason(R): The randrange() function is used to generate a random number between the specified range in its parameter.	1
<b>SECTION-B</b>		

19.	<p>Yuvika has to complete her computer science assignment of demonstrating the use of if-else statement. The code has some error(s). Rewrite the correct code underlining all the corrections made.</p> <pre>marks = int("enter marks")  temperature = input("enter temperature")  if marks &lt; 80 and temperature &gt;= 40      print("Not Good")  else      print("OK")</pre>	2
20.	<p>Write a short note on web hosting.</p> <p style="text-align: center;"><b>OR</b></p> <p>What is work of TCP / IP explain.</p>	2
21.	<p>Write the output after evaluating he following expressions:</p> <p>a) <math>k = 7 + 3 \times 2 \times 5 // 8 - 3</math>           print(k)</p> <p>b) <math>m = (8 &gt; 9 \text{ and } 12 &gt; 3 \text{ or not } 6 &gt; 8)</math>           print(m)</p>	1    1
22.	<p>What do you understand by table constraint in a table? Give a suitable example in support of your answer.</p>	2
23.	<p>Expand the following terms:</p> <p>a. PAN    b. HTML    c. URL    d. POP</p>	2
24.	<p>Predict the output of the Python code given below:</p> <pre>def func(n1 = 1, n2= 2):     n1= n1 * n2     n2= n2 + 2     print(n1, n2)  func( ) func(2,3)</pre> <p style="text-align: center;"><b>OR</b></p> <p>Predict the output of the Python code given below:</p> <pre>T= ["20", "50", "30", "40"] Counter=3 Total= 0 for l in [7,5,4,6]:     newT=T[Counter]     Total= float (newT) + l     print(Total) Counter=Counter-1</pre>	2
25.	<p>Rohit wants to increase the size of the column FeeAmount by 5, which is possible category out of DML / DDL of command he has to use to:</p> <p><b>(Write DDL or DML alongwith command / query)</b></p> <p>Display the structure of table (DDL or DML)</p> <p>Increase the size of column FeeAmount by 5 (DDL or DML)</p> <p style="text-align: center;"><b>OR</b></p> <p>Differentiate between char(n) and varchar(n) data types with respect to databases.</p>	2

**SECTION C**

26. (a) Observe the following table and answer the question accordingly 1+2

**Table:Product**

Pno	Name	Qty	PurchaseDate
101	Pen	102	12-12-2011
102	Pencil	201	21-02-2013
103	Eraser	90	09-08-2010
109	Sharpener	90	31-08-2012
113	Clips	900	12-12-2011

What is the degree and cardinality of the above table?

(b) Write the output of the queries (i) to (iv) based on the table, STUDENT given below:

S.NO	NAME	STIPEND	SUBJECT	AVERAGE	DIV
1	KARAN	400	PHYSICS	68	I
2	DIWAKAR	450	COMP Sc	68	I
3	DIVYA	300	CHEMISTRY	62	I
4	REKHA	350	PHYSICS	63	I
5	ARJUN	500	MATHS	70	I
6	SABINA	400	CHEMISTRY	55	II
7	JOHN	250	PHYSICS	64	I
8	ROBERT	450	MATHS	68	I
9	RUBINA	500	COMP Sc	62	I
10	VIKAS	400	MATHS	57	II

(i) Select MIN(AVERAGE) from STUDENT where SUBJECT="PHYSICS";  
 (ii) Select SUM(STIPEND) from STUDENT WHERE div='II';  
 (iii) Select AVG(STIPEND) from STUDENT where AVERAGE>=65;  
 (iv) Select COUNT(distinct SUBJECT) from STUDENT;

27. Write a definition of a function calculate () which count the number of digits in a file "ABC.txt". 3

**OR**

Write a function count() in Python that counts the number of "the" word present in a text file "STORY.TXT".  
 If the "STORY.TXT" contents are as follows:  
 This is the book I have purchased. Cost of the book was Rs. 320.  
 Then the output will be : **2**

28. (a) Write the outputs of the SQL queries (i) to (iii) based on the tables Emp: 3

EmpCode	Ename	Salary	JoinDate
E001	Raman	55000	2019-10-11
E002	Neha	65000	2019-11-20
E003	Priya	60000	2020-01-28
E004	Raghav	58000	2020-02-16

(i) Select ename, salary from emp where name like '\_r%'  
 (ii) Select count(salary) from emp where joindate>'2019-11-28'  
 (iii) Select max(joindate), min(joindate) from emp

	(b) Write the command to list all the databases in MySQL.	
29.	Write definition of a Method MSEARCH(STATES) to display all the state names from a list of STATES, which are starting with alphabet M.  For example: If the list STATES contains["MP","UP","MH","DL","MZ","WB"] The following should get displayed MP MH MZ	3
30.	Write a function in Python push(S,item), where S is stack and item is element to be inserted in the stack.  <b>OR</b>  Write a function in Python pop(S), where S is a stack implemented by a list of items. The function returns the value deleted from the stack.	3

**SECTION-D**

31.	<p>A software organization has to set up its new data center in Chennai. It has four blocks of buildings – A, B, C and D.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border: none;">Distance Between Blocks</th> <th style="border: none;"></th> <th style="text-align: left; border: none;">No. of Computers</th> <th style="border: none;"></th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">Block A to Block B</td> <td style="border: 1px solid black;">50m</td> <td style="border: 1px solid black;">Block A</td> <td style="border: 1px solid black;">25</td> </tr> <tr> <td style="border: 1px solid black;">Block B to Block C</td> <td style="border: 1px solid black;">150m</td> <td style="border: 1px solid black;">Block B</td> <td style="border: 1px solid black;">50</td> </tr> <tr> <td style="border: 1px solid black;">Block C to Block D</td> <td style="border: 1px solid black;">25m</td> <td style="border: 1px solid black;">Block C</td> <td style="border: 1px solid black;">125</td> </tr> <tr> <td style="border: 1px solid black;">Block A to Block D</td> <td style="border: 1px solid black;">170m</td> <td style="border: 1px solid black;">Block D</td> <td style="border: 1px solid black;">10</td> </tr> <tr> <td style="border: 1px solid black;">Block B to Block D</td> <td style="border: 1px solid black;">125m</td> <td></td> <td></td> </tr> <tr> <td style="border: 1px solid black;">Block A to Block C</td> <td style="border: 1px solid black;">90m</td> <td></td> <td></td> </tr> </tbody> </table> <p>(i) Suggest a cable layout of connection between the blocks (Diagram). <span style="float: right;">1</span></p> <p>(ii) Suggest the most suitable block to host the server along with the reason. <span style="float: right;">1</span></p> <p>(iii) Where would you place Repeater devices? Answer with justification. <span style="float: right;">1</span></p> <p>(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. <span style="float: right;">1</span></p> <p>(v) Where would you place Hub/Switch? Answer with justification.</p>	Distance Between Blocks		No. of Computers		Block A to Block B	50m	Block A	25	Block B to Block C	150m	Block B	50	Block C to Block D	25m	Block C	125	Block A to Block D	170m	Block D	10	Block B to Block D	125m			Block A to Block C	90m			
Distance Between Blocks		No. of Computers																												
Block A to Block B	50m	Block A	25																											
Block B to Block C	150m	Block B	50																											
Block C to Block D	25m	Block C	125																											
Block A to Block D	170m	Block D	10																											
Block B to Block D	125m																													
Block A to Block C	90m																													
32.	(a) Find and write the output of the following python code:  <pre>def change(s):     k=len(s)     m=""     for i in range(0,k):         if(s[i].isupper()):             m=m+s[i].lower()         elif s[i].isalpha():             m=m+s[i].upper()</pre>	2+3																												

```

else:
    m=m+'is'
print(m)
change('kv@onTHEtop')

```

(b) The given program is used to connect with MySQL and show the name of all the records from the table "stmaster" from the database "oraclenk". You are required to complete the statements so that the code can be executed properly.

```

import _____.connector_____pymysql
dbcon=pymysql._____(host="localhost", user="root",
_____="kvs@1234")
if dbcon.isconnected()==False
    print("Error in establishing connection:")
cur=dbcon._____( )

query="select * from stmaster"
cur.execute(_____) resultset=cur.fetchmany(3)
for row in resultset:
    print(row)
dbcon._____( )

```

**OR**

(a) Write output of the following code:

```

def func(a):
    s=m=n=0
    for i in (0,a):
        if i%2==0:
            s=s+i
        elif i%5==0:
            m=m+i
        else:
            n=n+i
    print(s,m,n)

```

func(15)

(b) Avni is trying to connect Python with MySQL for her project. Help her to write the python statement on the following:-

- (i) Name the library, which should be imported to connect MySQL with Python.
- (ii) Name the function, used to run SQL query in Python.
- (iii) Write Python statement of connect function having the arguments values as:  
 Host name :192.168.1.101  
 User : root  
 Password: Admin  
 Database : KVS

33. Divyanshi writing a program to create a csv file "a.csv" which contain user id and name of the beneficiary. She has written the following code. As a programmer help her to successfully execute the program.

```

import _____ #Line 1
with open('d:\\a.csv','w') as newFile:
    newFileWriter = csv.writer(newFile)

```

5

```
newFileWriter.writerow(['user_id','beneficiary'])
newFileWriter._____([1,'xyz']) #Line2
newFile.close()
```

```
with open('d:\\a.csv','r') as newFile:
    newFileReader = csv.
```

```
_____ (ne
wFile) #Line 3
```

```
    for row in newFileReader:
```

```
        print (row) #Line 4
```

```
newFile._____ #Line 5
```

- Name the module he should import in Line 1
- Fill in the blank in line 2 to write the row.
- Fill in the blank in line 3 to read the data from csv file.
- Write the output while line 4 is executed.
- Fill in the blank in line 5 to close the file.

OR

ANSHU is writing a program to search a name in a CSV file "MYFILE.csv". He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____ # Statement 1
f = open("MYFILE.csv", _____) # Statement 2
data = _____ ( f ) # Statement 3
nm = input("Enter name to be searched: ")
for rec in data:
    if rec[0] == nm:
        print (rec)
f. _____ ( ) # Statement 4
```

- Name the module he should import in Statement 1.
- In which mode, MOHIT should open the file to search the data in the file in statement 2?
- Fill in the blank in Statement 3 to read the data from the file.
- Fill in the blank in Statement 4 to close the file.
- Write the full form of CSV.

**SECTION-E**

34. Dinesh creates a table COMPANY with a set of 06 records. 1+1+2

C_ID	F_ID	Cname	Fees
C21	102	Grid Computing	40000
C22	106	System Design	16000
C23	104	Computer Security	8000
C24	106	Human Biology	15000
C25	102	Computer Network	20000
C26	105	Visual Basic	6000

Based on the data given above answer the following questions:

- (a) Identify the most appropriate column, which can be considered as Primary key.
- (b) If 3 columns are added and 2 rows are deleted from the table result, what will be the new degree and cardinality of the above table?
- (c) Write the statements to:
- (i) delete a record which has C\_ID as C24
  - (ii) Increase the Fee of all by 500.
- OR (Option for part (C) only)**
- (i) Add a column PLACE in the table with datatype as varchar with 20 Characters.
  - (i) Query to display all the records.

35. (a) What is the difference between 'w' and 'a' modes? 1+1+2

Anshuman is a Python learner, who has assigned a task to write python Codes to perform the following operations on binary files. Help him in writing codes to perform following tasks (b) & (c):

- (b) Write a statement to open a binary file named SCHOOL.DAT in read mode. The file SCHOOL.DAT is placed in D: drive.
- (c) Consider a binary file "employee.dat" containing details such as empno:ename:salary (separator ':'). Write a python function to display details of those employees who are earning between 20000 and 30000 (both values inclusive).



**KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION**

**SAMPLE PAPER SET 14**

**CLASS – XII**

**SUBJECT: Computer Science-083**

**Total Time- 3 Hours**

**Total Marks- 70**

**General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Question No.	Part A	Marks
	<b>Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.</b>	
1	Find the invalid identifier from the following: A. MyName    B. true    C. 2ndName    D. My_Name	1
2	Given the lists L=[1,3,6,82,5,7,11,92],the output of print(L[2:5])is A. [3,6,82]    B. [6,82,5]    C. [6,5,11]    D. [6,82,5,7]	1
3	Write a statement in Python to open a text file “ABC.TXT” in reading mode.	1
4	What will be the output of: print (10>20)?	1
5	Suppose a tuple T is declared as T = (10, 20, 30, 40), what will be the output of print(T*2)	1
6	Write the output of following code: d={'amit':19,'vishal':20} print(d.keys())	1
7	A tuple is declared as T = (20,5,16,29,83) What will be the problem with the code T[1]=100	1
8	Name the built-in mathematical function / method that is used to return greatest common divisor of x and y.	1
9	Identify the data type of X: X = tuple(list( (1,2,3,4,5) ) )  Dictionary    (b) string    (c) tuple    (d) list	1

10	Name the protocol that is used to upload and download files on internet	1
11	Sunita executes following two statements but got the variation in result 6 and 5 why? (i) select count(*) from user ; (ii) select count(name) from user ;	1
12	What is the difference between where and having in SQL.	1
13	Write a command to add new column marks in table 'student' data type int.	1
14	Define:           1) Field                   2) Record	1
15	What is Null Value.	1
16	Patterns in SQL are described using two special wild card characters such as ..... And .....	
	<b>Directions: In the following Qs, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:</b> 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 correct explanation for A. c) A is true but R is false. d) A is false but R is true. e) Both A and R are false	1
17	<b>Assertion (A):</b> writerow( ) function helps us to write multiple rows in a csv file at a time. <b>Reason (R) :</b> Writing one row at a time in a csv file is not possible, we must write multiple rows at a time.	1
18	<b>Assertion (A) :</b> With statement can be used to open any file, be it csv file or binary file and while using with statement to open any file there is no need to close the file. <b>Reason (R) :</b> With statement groups all the statements related to file handling and makes sure to close the file implicitly. It closes the file even when any error occurs during the execution of statements in a with statement.	1

<p><b>Both the Case study based questions are compulsory.</b></p> <p><b>Attempt any 4 sub parts from each question. Each question carries 1 mark</b></p>
--

A school KV is considering to maintain their eligible students' for scholarship's data using SQL to store the data. As a database administrator, Abhay has decided that:

- Name of the database - star
- Name of the table - student
- The attributes of student table as follows:

No. - numeric

Name – character of size 20

Stipend - numeric

Stream – character of size 20

AvgMark – numeric

Grade – character of size 1

Class – character of size 3

Table 'student'

No.	Name	Stipend	Stream	Avgmarks	Grade	Class
1	Karan	400.00	Medical	78.5	B	12B
2	Divakar	450.00	Commerce	89.2	A	11C
3	Divya	300.00	Commerce	68.6	C	12C
4	Arun	350.00	Humanities	73.1	B	12C
5	Sabina	500.00	Nonmedical	90.6	A	11A
6	John	400.00	Medical	75.4	B	12B
7	Robert	250.00	Humanities	64.4	C	11A
8	Rubina	450.00	Nonmedical	88.5	A	12A
9	Vikas	500.00	Nonmedical	92.0	A	12A
10	Mohan	300.00	Commerce	67.5	C	12C

- Write query to create table.
- Which column is suitable to be a primary key attribute.
- What is the degree and cardinality of table student?
- Display the details of student in ascending order of name.
- Write query to change the grade of karan from 'B' to 'A'

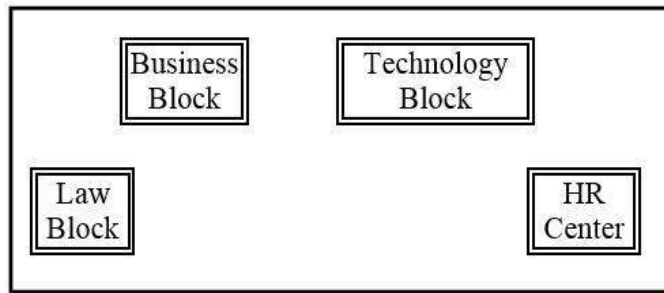
20	<p>Ranjan Kumar of class 12 is writing a program to create a CSV file “user.csv” which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.</p> <pre> import _____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file f=open(' user.csv','_____') # Line 2 newFileWriter = csv.writer(f) newFileWriter.writerow([UserName,PassWord]) f.close()  #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 </pre> <p>(a) Name the module he should import in Line 1.</p> <p>(b) In which mode, Ranjan should open the file to add data into the file.</p> <p>(c) Fill in the blank in Line 3 to read the data from a csv file.</p> <p>(d) Fill in the blank in Line 4 to close the file.</p> <p>(e) Write the output he will obtain while executing Line 5</p>	4
21	<p>Evaluate the following expression.</p> <p>a) <math>6 * 3 + 4 ** 2 // 5 - 8</math></p> <p>b) <math>10 &gt; 5</math> and <math>7 &gt; 12</math> or not <math>18 &gt; 3</math></p>	2
22	<p>What do you mean by keyword argument in python? Describe with example.</p> <p style="text-align: center;">OR</p> <p>What is scope of a variable in python and write basic scopes of variables in Python</p>	2
23	<p>Rewrite the following code in python after removing all syntax errors. Underline each</p>	2

	<p>correction done in the code:</p> <pre> Def func(a): for i in (0,a): if i%2 =0: s=s+1 else if i%5= =0 m=m+2 else: n=n+i print(s,m,n) func(15) </pre>	
24	<p>What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code. Select which option/s is/are correct</p> <pre> import random print(random.randint(15,25) , end=' ') print((100) + random.randint(15,25) , end = ' ') print((100) -random.randint(15,25) , end = ' ') print((100) *random.randint(15,25) ) </pre> <p>(i) 15 122 84 2500  (ii) 21 120 76 1500  (iii) 105 107 105 1800  (iv) 110 105 105 1900</p> <p style="text-align: center;">OR</p> <p>Predict the output of the following code.</p> <pre> def swap(P ,Q): P,Q=Q,P print( P,"#",Q) return (P) </pre> <p>R=100  S=200  R=swap(R,S)  print(R,"#",S)</p>	2
25	What is the significance of connect() and execute().	2
26	Write the steps to perform an Insert query in database connectivity application. Table 'student' values are rollno, name, age (1,'AMIT',22)	2
27	Define: 1. Repeater                      2. Router	2
28	Differentiate between web server and web browser. Write name of any two browsers.	2

29	<p>Write a function listchange(Arr)in Python, which accepts a list Arr of numbers, the function will replace the even number by value 10 and multiply odd number by 5. Sample Input Data of the list is:</p> <pre>a=[10,20,23,45] listchange(a,4) output : [10, 10, 115, 225]</pre>	3																																																						
30	<p>Write a Python program to find the number of lines in a text file 'abc.txt'.</p> <p>OR</p> <p>Write a Python program to count the word "if" in a text file abc.txt'.</p>	3																																																						
31	<p>Write the outputs of the SQL queries (i) to (iii) based on the relations Client and Product given below:</p> <p>Client:</p> <table border="1" data-bbox="180 763 1326 1003"> <thead> <tr> <th>C_ID</th> <th>ClientName</th> <th>City</th> <th>P_ID</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>Cosmetic Shop</td> <td>Delhi</td> <td>TP01</td> </tr> <tr> <td>02</td> <td>Total Health</td> <td>Mumbai</td> <td>FW05</td> </tr> <tr> <td>03</td> <td>Live Life</td> <td>Delhi</td> <td>BS01</td> </tr> <tr> <td>04</td> <td>Pretty Woman</td> <td>Delhi</td> <td>SH06</td> </tr> <tr> <td>05</td> <td>Dreams</td> <td>Delhi</td> <td>TP01</td> </tr> </tbody> </table> <p>Products:</p> <table border="1" data-bbox="180 1084 1326 1400"> <thead> <tr> <th>P_ID</th> <th>ProductName</th> <th>Manufacturer</th> <th>Price</th> <th>Discount</th> </tr> </thead> <tbody> <tr> <td>TP01</td> <td>Talcum Powder</td> <td>LAK</td> <td>40</td> <td></td> </tr> <tr> <td>FW05</td> <td>Face Wash</td> <td>ABC</td> <td>45</td> <td>5</td> </tr> <tr> <td>BS01</td> <td>Bath Soap</td> <td>ABC</td> <td>55</td> <td></td> </tr> <tr> <td>SH06</td> <td>Shampoo</td> <td>XYZ</td> <td>120</td> <td>10</td> </tr> <tr> <td>FW06</td> <td>Face Wash</td> <td>XYZ</td> <td>95</td> <td></td> </tr> </tbody> </table> <p>A) SELECT count(discount) FROM Product ;  B) SELECT Manufacturer, Max(Price), Min(Price) FROM Product group by manufacturer;  C) SELECT ProductName, Client.ClientName FROM Product, Client WHERE Product.P_ID = Client.P_ID AND Client.City=" Mumbai";</p>	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	TP01	P_ID	ProductName	Manufacturer	Price	Discount	TP01	Talcum Powder	LAK	40		FW05	Face Wash	ABC	45	5	BS01	Bath Soap	ABC	55		SH06	Shampoo	XYZ	120	10	FW06	Face Wash	XYZ	95		3
C_ID	ClientName	City	P_ID																																																					
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BS01	Bath Soap	ABC	55																																																					
SH06	Shampoo	XYZ	120	10																																																				
FW06	Face Wash	XYZ	95																																																					

32	<p>Write a function in python, PushEl(e) to add a new element and PopEl(e) to delete a element from a List, considering them to act as push and pop operations of the Stack data structure.</p> <p style="text-align: center;">OR</p> <p>Write a function in Python, Push(SItem) where , SItem is a dictionary containing the details of stationary items– {Sname:price}. The function should push the names of those items in the stack who have price greater than 75. Also display the count of elements pushed into the stack.</p> <p>For example: If the dictionary contains the following data:  Ditem={"Pen":106,"Pencil":59,"Notebook":80,"Eraser":25}</p> <p>The stack should contain:  Notebook      Pen</p> <p>The output should be: The count of elements in the stack is 2</p>	3
33	Differentiate between a text file, a binary file and a csv file.	3
34	<p>The code given below inserts the following record in the table Student:</p> <p style="margin-left: 40px;">RollNo – integer  Name – string  Clas – integer  Marks – integer</p> <p>Note the following to establish connectivity between Python and MYSQL:</p> <ul style="list-style-type: none"> <li>• Username is root</li> <li>• Password is tiger</li> <li>• The table exists in a MYSQL database named school.</li> <li>• The details (RollNo, Name, Clas and Marks) are to be accepted from the user.</li> </ul> <p>Write the following missing statements to complete the code:  Statement 1 – to form the cursor object  Statement 2 – to execute the command that inserts the record in the table Student.  Statement 3- to add the record permanently in the database</p> <pre>import mysql.connector as mysql def sql_data(): con1=mysql.connect(host="localhost",user="root",password="tiger",database="school") mycursor=_____ #Statement 1 rno=int(input("Enter Roll Number :: ")) name=input("Enter name :: ") class=int(input("Enter class :: ")) marks=int(input("Enter Marks :: ")) query="insert into student values({},{},{},{})".format(rno,name,clas,marks) _____ #Statement 2 _____ # Statement 3 print("Data Added successfully")</pre>	3
35	My Pace University is setting up its academic blocks at Naya Raipur and is planning to set up a network. The University has 3 academic blocks and one Human Resource Center as shown in	5

the diagram below:



Center to Center distances between various blocks/center is as follows:

Law Block to Business Block	40m
Law Block to Technology Block	80m
Law Block to HR Center	105m
Business Block to Technology Block	30m
Business Block to HR Center	35m
Technology Block to HR Center	15m

No of computers in each block:

Law Block	15
Technology Block	40
HR Center	115
Business Block	25

- Suggest the most suitable place (i.e., Block/Center) to install the server of this University with a suitable reason.
- Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.
- Which device will you suggest to be placed/installed in each of these blocks/centers to efficiently connect all the computers within these blocks/centers.
- Suggest the placement of a Repeater in the network with justification.
- The university is planning to connect its admission office in Delhi, which is more than 1250km from university. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer.



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%.

OR

A binary file "Stu.dat" has structure (rollno, name, marks). (i) (ii)

- I) Write a function in Python add\_record() to input data for a record and add to Stu.dat.
- II) Write a function in python Search record() to search a record from binary file "Stu.dat" on the basis of roll number.

\*\*\*\*\*

**General Instructions:**

1. This question paper contains five sections – A to E
2. All questions are compulsory
3. Section A, consists of 18 questions carrying 1 marks 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.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against c part only.
8. All programming questions are to be answered using Python Language only`

<b><u>Section-A</u></b>		
<b><u>(Each question carries 1 mark from question no. 1 to 16)</u></b>		
Q. NO.	QUESTION	MAR KS
1	Which of the following is an invalid variable? (a) hello_world_2 (b) 2_hello_world (c) day_two (d) _2	1
2	What data type is the object below? L=1, 'hello',23.5 (a) List (b) dictionary (c) tuple (d) array	1
3	Which of the following function headers is correct? (a) def f(a=2,b): (b) def f(a=3,b,c=6): (c) def f(a=3,b=1,c=6): (d) def f(a=3,b=1,c=6,d):	1
4	Which of the following random module functions generated a floating point number? (a) random() (b) randint() (c) uniform() (d) all of these	1
5	Which of the following is not a valid mode to open a file? (a) wb+ (b) rw (c) ab (d) r+	1
6	What is the use of return statement in function ?	1
7	Which function in sql is used to calculate average from column ?	1

8	<p>What will be the output of the following Python code?</p> <pre>l=[1,2,3,4,5] l[1:2]=[7,8] print(l)</pre> <p>(a) [1,2,3,4,5]  (b) [1, 7, 8, 3, 4, 5]  (c) [1, [7, 8], 3, 4, 5]  (d) Syntax error</p>	1
9	<p>In a stack, deletions take place at ____ end.</p> <p>(a) front  (b) top  (c) rear  (d) any</p>	1
10	<p>A device that forwards data packet from one network to another is called a</p> <p>(a) Bridge  (b) Router  (c) Hub  (d) Gateway</p>	1
11	<p>Which of the following is not a legal sub-language of SQL?</p> <p>(a) DDL  (b) DML  (c) TCL  (d) AQL</p>	1
12	<p>_____ clause of the following query must be added with keyword _____ to display the fields given in the select list as per a given condition.</p> <pre>select id,name,salary*1.1 where instructor=10005;</pre> <p>(a) where, having  (b) select, from  (c) where, from  (d) where,select</p>	1
13	<p>Consider the following SQL statement. What type of statement is this?</p> <pre>insert into instructor values(10211,'Amit','Science',6600);</pre> <p>(a) DDL  (b) DML  (c) DCL  (d) TCL</p>	1
14	<p>The following SQL is which type of join:</p> <pre>select customer.cust_id,order.cust_id,name, order_id from customer, order</pre> <p>(a) Equijoin  (b) Natural join  (c) Outer join  (d) Cartesian Product</p>	1
15	<p>A database_____ is a special control structure that facilitates the row by row processing of records in the resultset.</p> <p>(a) fetch  (b) table  (c) cursor  (d) query</p>	1

16	Which of the following attributes cannot be considered as a choice for primary key? (a) id (b) License number (c) Street no (d) dept_id	1
	<b><u>(Assertion Reasoning type question - Each question carries 1 marks from question no. 17 to 18)</u></b>	
Q17:	Assertion(A): The programming expression int('12.5') results in error. Reason(R): The literal value for int() with base 10: '12.5' is valid. (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true, but R is not the correct explanation of A. (c) A is true, but R is false. (d) A is false, but R is true.	1
Q18:	Assertion(A): To remove the middle element 3 from the list L= [1,2,3,4,5] the statement L.remove (3) can be used. Reason(R): The function remove will delete the element 4 in the list as it is placed on the index no 3. (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true, but R is not the correct explanation of A. (c) A is true, but R is false. (d) A is false, but R is true.	1
	<b><u>Section-B</u></b> <b><u>(Very short answer question -Each question carries 2 marks from question no. 19 to 26)</u></b>	
19	Write the output of the following line of code: a=10 def call(): global a a=15 b=20 print(a) call() print(a)	2
20	What is a Python module? What is its significance?	2
21	Differentiate between read() and readlines() function.	2
22	Enlist two operations performed on stacks. Why is stack called a LIFO data structure?	2
23	Expand the following terms with respect to Networking: (i) MODEM (ii) WLL (iii) FTP (iv) TCP/IP	2
24	A teacher provides "https://www.youtube.com/watch?v=90ORfh6a-kM" to his /her students. Help them to identify the URL and domain Name.	2
25	Differentiate between Candidate Key and Alternate Key in context of RDMS.	2
26	What is wrong with the following statement? <b>Select * from employee where grade= NULL;</b> Write the corrected form of above SQL statement.	2
	<b><u>Section-C</u></b> <b><u>(Short answer question -Each question carries 3 marks from question no. 27 to 32)</u></b>	

27	Write a method/ function DISPLAYWORDS() in python to read lines from a text file ABC.TXT, and display those words that are greater than 5 characters.	3																																																																		
28	Write a function that takes two numbers and return that has maximum one's digit. (for eg if 491 and 278 are passed it will return 278 as it has got maximum one's digit)	3																																																																		
29	Predict the output. (i)L=[1,4,9,16,35,27] l=[num/3 for num in L if num%3==0] print(l) (ii) [x+y for x in 'ball' for y in 'boy'] (iii) l=[1,2,5,6,7,9,10,22,38] k=[e1*r for e1 in l if (e1-4)>1 for r in l[:4]] print(k)	3																																																																		
30	Write PUSH(City) and POP(City) methods in Python to add city and remove city considering them to act as Push and Pop operations of data structure Stack.	3																																																																		
31	Consider the following dept and worker tables. Find outputs for sql queries (i) to (iii):  <div style="text-align: center;"> <p><b>Table : DEPT</b></p> <table border="1"> <thead> <tr> <th>DCODE</th> <th>DEPARTMENT</th> <th>CITY</th> </tr> </thead> <tbody> <tr> <td>D01</td> <td>MEDIA</td> <td>DELHI</td> </tr> <tr> <td>D02</td> <td>MARKETING</td> <td>DELHI</td> </tr> <tr> <td>D03</td> <td>INFRASTRUCTURE</td> <td>MUMBAI</td> </tr> <tr> <td>D05</td> <td>FINANCE</td> <td>KOLKATA</td> </tr> <tr> <td>D04</td> <td>HUMAN RESOURCE</td> <td>MUMBAI</td> </tr> </tbody> </table> <p><b>Table : WORKER</b></p> <table border="1"> <thead> <tr> <th>WNO</th> <th>NAME</th> <th>DOJ</th> <th>DOB</th> <th>GENDER</th> <th>DCODE</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>George K</td> <td>2013-09-02</td> <td>1991-09-01</td> <td>MALE</td> <td>D01</td> </tr> <tr> <td>1002</td> <td>Ryma Sen</td> <td>2012-12-11</td> <td>1990-12-15</td> <td>FEMALE</td> <td>D03</td> </tr> <tr> <td>1003</td> <td>Mohitesh</td> <td>2013-02-03</td> <td>1987-09-04</td> <td>MALE</td> <td>D05</td> </tr> <tr> <td>1007</td> <td>Anil Jha</td> <td>2014-01-17</td> <td>1984-10-19</td> <td>MALE</td> <td>D04</td> </tr> <tr> <td>1004</td> <td>Manila Sahai</td> <td>2012-12-09</td> <td>1986-11-14</td> <td>FEMALE</td> <td>D01</td> </tr> <tr> <td>1005</td> <td>R SAHAY</td> <td>2013-11-18</td> <td>1987-03-31</td> <td>MALE</td> <td>D02</td> </tr> <tr> <td>1006</td> <td>Jaya Priya</td> <td>2014-06-09</td> <td>1985-06-23</td> <td>FEMALE</td> <td>D05</td> </tr> </tbody> </table> </div> <p>i) select count(*), DCODE from WORKER group by DCODE having count(*)&gt;1;  ii) select distinct DEPARTMENT from DEPT;  iii) select NAME, DEPARTMENT, CITY from WORKER w, DEPT d where w.DCODE=d.DCODE and WNO&lt;1003;</p>	DCODE	DEPARTMENT	CITY	D01	MEDIA	DELHI	D02	MARKETING	DELHI	D03	INFRASTRUCTURE	MUMBAI	D05	FINANCE	KOLKATA	D04	HUMAN RESOURCE	MUMBAI	WNO	NAME	DOJ	DOB	GENDER	DCODE	1001	George K	2013-09-02	1991-09-01	MALE	D01	1002	Ryma Sen	2012-12-11	1990-12-15	FEMALE	D03	1003	Mohitesh	2013-02-03	1987-09-04	MALE	D05	1007	Anil Jha	2014-01-17	1984-10-19	MALE	D04	1004	Manila Sahai	2012-12-09	1986-11-14	FEMALE	D01	1005	R SAHAY	2013-11-18	1987-03-31	MALE	D02	1006	Jaya Priya	2014-06-09	1985-06-23	FEMALE	D05	3
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32	Which functions can be used as the group functions? What is the use of GROUP BY clause? How are they useful?	3																																																																		
	<b><u>Section-D</u></b> <b><u>(Long answer -Each question carries 5 marks from question no. 33 to 34)</u></b>																																																																			
33	Write a program to get student data (rollno., name and marks) from user until user wants to add data. Then search for records with roll no 12 or 14. If found display the records else display an appropriate message.	5																																																																		
34	(a) Give one advantage and one disadvantage of optical fibre cable. (b) Differentiate between Tree and Bus topologies of network. (c) What do email and FTP mean? (d) Differentiate between repeater and bridge. (e) Give full form of NFS and FTP.	5																																																																		
	<b><u>Section-E</u></b> <b><u>(Case –Study Questions -Each question carries 4 marks from question no. 35 to 36)</u></b>																																																																			

35

Rohit, a student of class 12, is learning CSV File Module in Python. During examination, he has been assigned an incomplete python code (shown below) to create a CSV File 'Student.csv' (content shown below). Help him in completing the code which creates the desired CSV File. Do any 4 out of 5.

CSV File

```
1,AKSHAY,XII,A
2,ABHISHEK,XII,A
3,ARVIND,XII,A
4,RAVI,XII,A
5,ASHISH,XII,A
```

Incomplete Code

```
import _____ #Statement-1
fh = open(_____, _____, newline="") #Statement-2
stuwriter = csv._____ #Statement-3
data = [ ]
header = ['ROLL_NO', 'NAME', 'CLASS', 'SECTION']
data.append(header)
for i in range(5):
    roll_no = int(input("Enter Roll Number : "))
    name = input("Enter Name : ")
    Class = input("Enter Class : ")
    section = input("Enter Section : ")
    rec = [ _____ ]#Statement-4
    data.append(_____) #Statement-5
    stuwriter. _____ (data) #Statement-6
fh.close()
```

- (i) Identify the suitable code for blank space in the line marked as Statement-1.
- (ii) Identify the missing code for blank space in line marked as Statement-2.
- (iii) Write the function name (with argument) that should be used in the blank space of line marked as Statement-3. **OR** Identify the suitable code for blank space in line marked as Statement-4.
- (iv) Identify the suitable code for blank space in the line marked as Statement-5

4

Write SQL commands for the following queries (i) to (iv) based on the relations Shoppe and Accessories given below: 4

**TABLE : SHOPPE**

ID	SName	Area
S001	ABC Computronics	CP
S002	All Infotech Media	GK II
S003	Tech Shoppe	CP
S004	Geeks Tecno Soft	Nehru Place
S005	Hitech Tech Store	Nehru Place

**TABLE : ACCESSORIES**

No	Name	Price	ID
A01	Mother Board	12000	S01
A02	Hard Disk	5000	S01
A03	Keyboard	500	S02
A04	Mouse	300	S01
A05	Mother Board	13000	S02
A06	Keyboard	400	S03
A07	LCD	6000	S04
T08	LCD	5500	S05
T09	Mouse	350	S05
T10	Hard Disk	4500	S03

- (i) to display name and price of all the accessories in descending order of their price.  
(ii) to display id and sname of all shoppe located in nehru place.  
(iii) to display minimum and maximum price of each name of accessories.  
(iv) to display name, price of all accessories and their respective sname where they are available.

