PRE-BOARD EXAMINATION, 2020-21

SUBJECT : COMPUTER SCIENCE (NEW) – 083 M.M : 70

CLASS : XII TIME : 3 HOURS

General Instructions:

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

Question No.	PART – A	Marks Allocated
	Section – I	
	Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no. 1 to 21.	
1	Which of the following is not a valid identifier name in Python? Justify reason for it not being a valid name. a) 5Total b) _Radius c) pie d)While	1
2	Find the output - >>>A = [17, 24, 15, 30] >>>A.insert(2, 33) >>>print (A [-4])	1
3	Name the Python Library modules which need to be imported to invoke the following functions: (i) ceil() (ii) randrange()	1
4	Which of the following are valid operator in Python: (i) */ (ii) is (iii) ^ (iv) like	1

5	Which of the following statements will create a tuple ? (a) Tp1 = (“a”, “b”) (b) Tp1= (3) * 3 (c) Tp1[2] = (“a”, “b”) (d) None of these	1
6	What will be the result of the following code? >>>d1 = {“abc” : 5, “def” : 6, “ghi” : 7} >>>print (d1[0]) (a) abc (b) 5 (c) {“abc”:5} (d) Error	1
7	Find the output of the following: >>>S = 1, (2,3,4), 5, (6,7) >>> len(S)	1
8	Which of the following are Keywords in Python ? (i) break (ii) check (iii) range (iv) while	1
9	_____ is a specific condition in a network when more data packets are coming to network device than they can handle and process at a time.	1
10	Ravi received a mail from IRS department on clicking “Click –Here”, he was taken to a site designed to imitate an official looking website, such as IRS.gov. He uploaded some important information on it. Identify and explain the cybercrime being discussed in the above scenario.	1
11	Which command is used to change the number of columns in a table?	1
12	Which keyword is used to select rows containing column that match a wildcard pattern?	1
13	The name of the current working directory can be determined using _____ method.	1
14	Differentiate between Degree and Cardinality.	1
15	Give one example of each – Guided media and Unguided media	1
16	Which of the following statement create a dictionary? a) d = { } b) d = {“john”:40, “peter”:45} c) d = (40 : “john”, 45 : “peter”} d) d = All of the mentioned above	1

17 Find the output of the following: 1

>>>Name = “Python Examination”

>>>print (Name [: 8 : -1])

18 All aggregate functions except _____ ignore null values in their input collection. 1

a) Count (attribute) b) Count (*) c) Avg () d) Sum ()

19 Write the expand form of Wi-Max. 1

20 Group functions can be applied to any numeric values, some text types and DATE values. (True/False) 1

21 _____ is a network device that connects dissimilar networks. 1

Section – II

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

22 A department is considering to maintain their worker data using SQL to store the data. As a database administer, Karan has decided that : 1*4=4

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
DEPARTMENT – character of size 10

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

a) Write a query to create the given table WORKER. 1

b) Identify the attribute best suitable to be declared as a primary key. 1

c) Karan wants to increase the size of the FIRST_NAME column from 10 to 20 characters. Write an appropriate query to change the size. 1

d) Karan wants to remove all the data from table WORKER from the database Department. Which command will he use from the following: 1
i) DELETE FROM WORKER;
ii) DROP TABLE WORKER;
iii) DROP DATABASE Department;
iv) DELETE * FROM WORKER;

e) Write a query to display the Structure of the table WORKER, i.e. name of the attribute and their respective data types.

23 Ashok Kumar of class 12 is writing a program to create a CSV file "empdata.csv" with empid, name and mobile no and search empid and display the record. He has written the following code. As a programmer, help him to successfully execute the given task. 1*4=4

```
import _____                                        #Line1
fields=['empid','name','mobile_no']
rows=[['101','Rohit','8982345659'],['102','Shaurya','8974564589'],
    ['103','Deep','8753695421'],['104','Prerna','9889984567'],
    ['105','Lakshya','7698459876']]
filename="empdata.csv"
with open(filename,'w',newline='') as f:
   csv_w=csv.writer(f,delimiter=',')
   csv_w._____                                      #Line2
   csv_w._____                                      #Line3

with open(filename,'r') as f:
   csv_r=_____(f,delimiter=',')                     #Line4
   ans='y'
   while ans=='y':
      found=False
      emplid=(input("Enter employee id to search="))
      for row in csv_r:
         if len(row)!=0:
            if _____==emplid:                       #Line5
               print("Name : ",row[1])
               print("Mobile No : ",row[2])
               found=True
```

```
            break
    if not found:
        print("Employee id not found")
    ans=input("Do you want to search more? (y)")
```

(a) Name the module he should import in Line 1. 1

(b) Write a code to write the fields (column heading) once from fields list in Line2. 1

(c) Write a code to write the rows all at once from rows list in Line3. 1

(d) Fill in the blank in Line4 to read the data from a csv file. 1

(e) Fill in the blank to match the employee id entered by the user with the empid of record from a file in Line5. 1

PART – B

Section – I

24 Evaluate the following expressions: 2

a) 12*(3%4)//2+6

b) not 12 > 6 and 7 < 17 or not 12 < 4

25 Define and explain all parts of a URL of a website. i.e. https://www.google.co.in. It has various parts. 2

OR

Define cookies and hacking.

26 Expand the following terms: 2

a) IPR b) SIM c) IMAP d)HTTP

27 What is the difference between a Local Scope and Global Scope ? Also, give a suitable Python code to illustrate both. 2

OR

Define different types of formal arguments in Python, with example.

28 Observe the following Python code very carefully and rewrite it after removing all syntactical errors with each correction underlined. 2

```
DEF result_even( ):
    x = input(“Enter a number”)
    if  (x % 2 = 0) :
        print (“You entered an even number”)
```

```
    else:
        print("Number is odd")
even ( )
```

29 What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the minimum values that can be assigned to each of the variables BEGIN and LAST. 2

```
import random
VALUES = [10, 20, 30, 40, 50, 60, 70, 80]
BEGIN = random.randint (1, 3)
LAST = random.randint(2, 4)
for I in range (BEGIN, LAST+1):
    print (VALUES[I], end = "-")
```

(i) 30-40-50- (ii) 10-20-30-40-

(iii) 30-40-50-60- (iv) 30-40-50-60-70-

30 What is the difference between Primary Key and Foreign Key? Explain with Example. 2

31 What is the use of commit and rollback command in MySql. 2

32 Differentiate between WHERE and HAVING clause. 2

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

```
def makenew(mystr):
    newstr = " "
    count = 0
    for i in mystr:
        if count%2 !=0:
            newstr = newstr+str(count)
        else:
            if i.islower():
                newstr = newstr+i.upper()
            else:
                newstr = newstr+i
        count +=1
    newstr = newstr+mystr[:1]
```

```
    print("The new string is :", newstr)
makenew("sTUdeNT")
```

SECTION - II

34 Write a function bubble_sort (Ar, n) in python, Which accepts a list Ar of numbers and n is a numeric value by which all elements of the list are sorted by Bubble sort Method. 3

35 Write a function in python to count the number lines in a text file 'Country.txt' which is starting with an alphabet 'W' or 'H'. If the file contents are as follows: 3

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

The output of the function should be:

W or w : 1

H or h : 2

OR

Write a user defined function to display the total number of words present in the file.

A text file "Quotes.Txt" has the following data written in it:

Living a life you can be proud of doing your best Spending your time with people and activities that are important to you Standing up for things that are right even when it's hard Becoming the best version of you.

The countwords() function should display the output as:

Total number of words : 40

36 Write the output of the SQL queries (i) to (iii) based on the table: Employee 3

Ecode	Name	Dept	DOB	Gender	Designation	Salary
101	Sunita	Sales	06-06-1995	F	Manager	25000
102	Neeru	Office	05-07-1993	F	Clerk	12000
103	Raju	Purchase	05-06-1994	M	Manager	26000
104	Neha	Sales	08-08-1995	F	Accountant	18000
105	Nishant	Office	08-10-1995	M	Clerk	10000
106	Vinod	Purchase	12-12-1994	M	Clerk	10000

(i) Select sum(Salary) from Employee where Gender = 'F' and Dept = 'Sales';

(ii) Select Max(DOB), Min(DOB) from Employee;

(iii) Select Gender, Count(*) from Employee group by Gender;

37 Write a function AddCustomer(Customer) in Python to add a new Customer information NAME into the List of CStack and display the information. 3

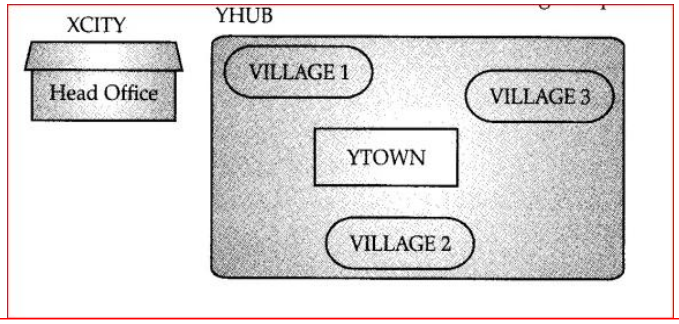
OR

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

SECTION - III

38 Intelligent Hub India is a knowledge community aimed to uplift the standard of skills and knowledge in the society. It is planning to setup its training centres in multiple towns and villages of India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as given. 5

As a network consultant, you have to suggest the best network related solution for their issues/problems raised in (i) to (v) keeping in mind the distance between various locations and given parameters.



Shortest distance between various locations:

VILLAGE 1 To YTOWN	2 KM
VILLAGE 2 To YTOWN	1.2 KM
VILLAGE 3 To YTOWN	3 KM
VILLAGE 1 To VILLAGE 2	3.5 KM
VILLAGE 1 To VILLAGE 3	4.5 KM
VILLAGE 2 To VILLAGE 3	3.5 KM
CITY Head office to YHUB	30 KM

Number of computers iinstalled at various locations are as follows:

YTOWN	100
VILLAGE 1	10
VILLAGE 2	15
VILLAGE 3	15
CITY OFFICE	5

Note:

* In Villages, there are community centres, in which one room has been given as training center to this organization to install computers.
* The organization has got financial support from the government and top IT companies.

1. Suggest the most appropriate location of the SERVER in the YHUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.
2. Suggest the best wired medium and draw the cable layout (location to location) to efficiently connect various locations within the YHUB.
3. Which hardware device will you suggest to connect all the computers within each location of YHUB?
4. Which server/protocol will be most helpful to conduct live interaction of Experts from Head office and people at YHUB locations?
5. Suggest a device/software and its placement that would provide data security for the entire network of the YHUB.

39 Write SQL commands for the following queries (i) to (v) based on the relation 5

Trainer and **Course** given below:

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

(i) Display the Trainer Name, City & Salary in descending order of their Hiredate.

(ii) To display the TNAME and CITY of Trainer who joined the Institute in the month of December 2001.

(iii) To display TNAME, HIREDATE, CNAME, STARTDATE from tables TRAINER and COURSE of all those courses whose FEES is less than or equal to 10000.

(iv) To display number of Trainers from each city.

(v) To display the Trainer ID and Name of the trainer who are not belongs to 'Mumbai' and 'DELHI'

40 Given a binary file "emp.dat" has structure (Emp_id, Emp_name, Emp_Salary). Write a function in Python countsal() in Python that would read contents of the file "emp.dat" and display the details of those employee whose salary is greater than 20000. 5

OR

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

(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.

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PRE-BOARD EXAMINATION, 2020-21

SUBJECT : COMPUTER SCIENCE (NEW) – 083 **M.M : 70**

CLASS : XII **TIME : 3 HOURS**

MARKING SCHEME

Question No.	Part – A	Marks Allocated
	Section – I	
1	a) 5Total Reason : An identifier cannot start with a digit.	1
2	24	1
3	(i) math (ii) random (½ mark for each module)	1
4	Valid operators : (ii) is (iii) ^ (½ mark for each operator)	1
5	(a) Tp1 = (“a”, “b”)	1
6	(d) Error	1
7	Ans. 4	1
8	(i) break (iv) while (½ mark for each option)	1
9	Network Congestion	1
10	It is an example of phishing	1
11	ALTER	1
12	LIKE	1
13	getcwd()	1
14	Degree – it is the total number of columns in the table. Cardinality – it is the total number of tuples/Rows in the table.	1
15	Guided – Twisted pair, Coaxial Cable, Optical Fiber (any one) Unguided – Radio waves, Satellite, Micro Waves (any one)	1
16	d) d = All of the mentioned above	1
17	Answer - **noitanima**	1
18	b) Count(*)	1
19	Wi-Max – Worldwide Interoperability for Microwave Access	1
20	True	1
21	Gateway	1

	Section – II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark.**	
22	Answers: a) Create table WORKER(WORKER_ID varchar(3), FIRST_NAME varchar(10), LAST_NAME varchar(10), SALARY integer, JOINING_DATE Date, DEPARTMENT varchar(10)); b) WORKER_ID c) alter table worker modify FIRST_NAME varchar(20); d) DELETE FROM WORKER; e) Desc WORKER / Describe WORKER;	1*4=4
23	Answers: a) csv b) writerow(fields) c) writerows(rows) d) csv.reader e) row[0]	1*4=4
	Part – B **Section – I**	
24	a) 24 b) True	2
25	URL stands for Uniform Resource Locator and it is the complete address of a website or web server, e.g.https://www.google.co.in- name of the protocol : https, Web service : www, name of the server: google, DNS Name : co, Name of the country site belongs : in (india) **OR** **Cookies:** .Cookies are messages that a web server transmits to a web browser so that the web server can keep track of the user's activity on a specific website. Cookies are saved in the form of text files in the client computer. **Hacking:** It is a process of accessing a computer system or network without knowing the access authorization credential of that system. Hacking can be illegal or ethical depending on the intention of the hacker.	2

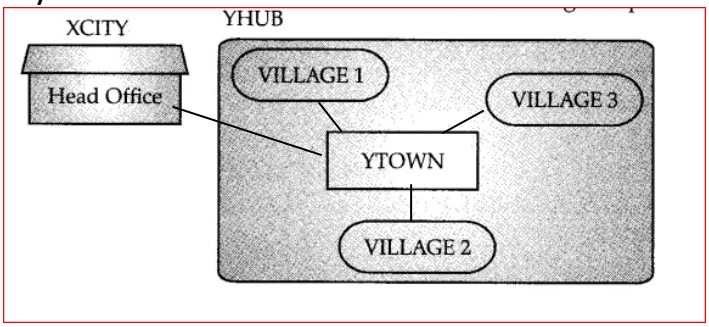
26	a) IPR – Intellectual Property Rights b) SIM – Subscriber's Identity Module c) IMAP – Internet Message Access Protocol d) HTTP – Hyper text transfer Protocol	2
27	A local scope is variable defined within a function. Such variables are said to have local scope. With example A global variable is a variable defined in the ;main' program (_main_ section). Such variables are said to have global scope. With example **OR** Python supports three types of formal arguments : 1) Positional arguments (Required arguments) - When the function call statement must match the number and order of arguments as defined in the function definition. Eg. def check (x, y, z) : 2) Default arguments – A parameter having default value in the function header is known as default parameter. Eg. def interest(P, T, R=0.10) : 3) Keyword (or named) arguments- The named arguments with assigned value being passed in the function call statement. Eg. interest (P=1000, R=10.0, T = 5)	2
28	def result_even( ): x = int(input("Enter a number")) if (x % 2 == 0) : print ("You entered an even number") else: print("Number is odd") result_even( )	2
29	OUTPUT – (i) 30-40-50- Minimum value of BEGIN: 1 Minimum value of LAST: 2	2
30	Primary Key**:** A primary key is used to ensure data in the specific column is unique. It is a column cannot have NULL values. It is either an existing table column or a column that is specifically generated by the database according to a defined sequence.	2

	Example: Refer the figure – STUD_NO, as well as STUD_PHONE both, are candidate keys for relation STUDENT but STUD_NO can be chosen as the primary key (only one out of many candidate keys). Foreign Key**:** A foreign key is a column or group of columns in a relational database table that provides a link between data in two tables. It is a column (or columns) that references a column (most often the primary key) of another table. **Example:** Refer the figure – STUD_NO in STUDENT_COURSE is a foreign key to STUD_NO in STUDENT relation. **STUDENT** **Table 1** **STUDENT_COURSE** **Table 2**	
31	**Commit** : MySqlConnection.commit() method sends a COMMIT statement to the MySql server, committing the current transaction. **Rollback**: MySqlConnection.rollback reverts the changes made by the current transaction.	2
32	WHERE clause is used to select particular rows that satisfy a condition whereas HAVING clause is used in connection with the aggregate function, GROUP BY clause. *For ex. – select * from student where marks > 75;* This statement shall display the records for all the students who have scored more than 75 marks. On the contrary, the statement – *select * from student group by stream having marks > 75;* shall display the records of all the students grouped together on the basis of stream but only for those students who have scored marks more than 75.	2

STUD_NO	STUD_NAME	STUD_PHONE	STUD_STATE	STUD_COUNTRY	STUD_AGE
1	RAM	9716271721	Haryana	India	20
2	RAM	9898291281	Punjab	India	19
3	SUJIT	7898291981	Rajsthan	India	18
4	SURESH		Punjab	India	21

STUD_NO	COURSE_NO	COURSE_NAME
1	C1	DBMS
2	C2	Computer Networks
1	C2	Computer Networks

33	Ans: The new string is : S1U3E5Ts (1/2 mark for each change i.e. S 1 3 E 5 s)	2
	SECTION - II	
34	def bubble_sort(Ar, n): print ("Original list:", Ar) for i in range(n-1): for j in range(n-i-1): if Ar[j] > Ar[j+1]: Ar[j], Ar[j+1] = Ar[j+1], Ar[j] print ("List after sorting :", Ar) ***Note: Using of any correct code giving the same result is also accepted.***	3
35	def count_W_H(): f = open (“Country.txt”, “r”) W,H = 0,0 r = f.read() for x in r: if x[0] == “W” or x[0] == “w”: W=W+1 elif x[0] == “H” or x[0] == “h”: H=H+1 f.close() print (“W or w :”, W) print (“H or h :”, H) ***OR*** def countwords(): s = open("Quotes.txt","r") f = s.read() z = f.split () count = 0 for l in z: count = count + 1 print ("Total number of words:", count) ***Note: Using of any correct code giving the same result is also accepted.***	3

36	OUTPUT:- (i) 43000 (ii) Max (DOB) Min(DOB) 08-10-1995 05-071993 (iii) Gender Count(*) F 3 M 3	3
37	def AddCustomer(Customer): CStake.append(Customer) If len(CStack)==0: print (“Empty Stack”) else: print (CStack) **OR** def DeleteCustomer(): if (CStack ==[]): print(“There is no Customer!”) else: print(“Record deleted:”,CStack.pop())	3
	Section – III	
38	Answers: (i) YTOWN Justification:-Since it has the maximum number of computers. It is closet to all other locatios. 80-20 Network rule. (ii) Optical Fiber Layout:  (iii) Switch or Hub (iv) Video conferencing or VoIP or any other correct service/protocol (v) Firewall- Placed with the Server at YHUB.	5

39	ANSWERS:- (i) SELECT TNAME, CITY, SALARY FROM TRAINER ORDER BY HIREDATE; (ii) SELECT TNAME, CITY FROM TRAINER WHERE HIREDATE BETWEEN '2001-12-01' AND '2001-12-31'; (iii) SELECT TNAME, HIREDATE, CNAME, STARTDATE FROM TRAINER, COURSE WHERE TRAINER.TID=COURSE.TID AND FEES<=10000; (iv) SELECT CITY, COUNT(*) FROM TRAINER GROUP BY CITY; (v) SELECT TID, TNAME, FROM TRAINER WHERE CITY NOT IN('DELHI', 'MUMBAI');	5
40	Answer:- (Using of any correct code giving the same result is also accepted) import pickle def countsal(): f = open ("emp.dat", "rb") n = 0 try: while True: rec = pickle.load(f) if rec[2] > 20000: print(rec[0], rec[1], rec[2], sep="\t") num = num + 1 except: f.close() **OR** import pickle def add_record(): fobj = open("Stu.dat","ab") rollno =int(input("Roll no:")) name = int(input("Name:")) marks = int(input("Marks:")) data = [rollno, name, marks] pickle.dump(data,fobj) fobj.close() def Search_record(): f = open("Stu.dat", "rb")	5

```
stu_rec = pickle.load(f)
found = 0
rno = int(input("Enter the roll number to search:"))
try:
  for R in stu_rec:
    if R[0] == rno:
      print ("Successful Search:, R[1], "Found!")
      found = 1
     break
except:
    if found == 0:
        print ("Sorry, record not found:")
    f.close()
```

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Kendriya Vidyalaya Sangathan, Regional Office, Bhopal

Pre-Board Examination 2020-21

Class- XII(Computer Science (083))

M.M.:70 Time: 3 hrs.

Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
   a. Section – I is short answer questions, to be answered in one word or one line.
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6. All programming questions are to be answered using Python Language only

PART-A

Section-I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.

1. Find the invalid identifier from the following **1**

a) def b) For c)_bonus d)First_Name

2. Given the lists Lst=['C','O','M','P','U','T','E','R'] , write the output of: **1**

print(Lst[3:6])

3. _____Function of writer object is used to send data to csv file to store. **1**

4. What will be the output of following program: **1**

```
a='hello' b='virat'
for i in range(len(a)): print(a[i],b[i])
```

5. Give Output:

```
colors=["violet", "indigo", "blue", "green", "yellow", "orange", "red"]
del colors[4]
colors.remove("blue")
colors.pop(3)
print(colors)
```

1

6. Which statement is correct for dictionary?

(i) A dictionary is a ordered set of key:value pair

(ii) each of the keys within a dictionary must be unique **1**

(iii) each of the values in the dictionary must be unique

(iv) values in the dictionary are immutable

7. Identify the valid declaration of Rec: **1**

Rec=(1,"Vikrant,50000)

(i)List (ii)Tuple (iii)String (iv)Dictionary

8. Find and write the output of the following python code: **1**

```
def myfunc(a):
    a = a + 2
    a = a * 2
    return a
print(myfunc(2))
```

9. Name the protocol that is used to transfer file from one computer to another. **1**

10. Raj is a social worker, one day he noticed someone is writing insulting or demeaning comments on his post. What kind of Cybercrime Raj is facing? **1**

11. Which command is used to change the existing information of table? **1**

12. Expand the term: RDBMS **1**

13. Write an Aggregate function that is used in MySQL to find No. of Rows in the database Table **1**

14. For each attribute of a relation, there is a set of permitted values, called the_____of that attribute. **1**

a. Dictionaries

b. Domain

c. Directory

d. Relation

15. Name the Transmission media which consists of an inner copper core and a second conducting outer sheath. **1**

16. Identify the valid statement for list L=[1,2,"a"]: **1**

(i) L.remove("2")

(ii) L.del(2)

(iii) del L[2]

(iv) del L["a"]

17. Find and write the output of the following python code: **1**

```
x = "Python"
print(x[ : :-1])
print(x)
```

18. In SQL, write the query to display the list of databases stored in MySQL. **1**

19. Write the expanded form of GPRS? **1**

20. Which is not a constraint in SQL?

a) Unique

b) Distinct **1**

c) Primary key

d) check

21. Define Bandwidth? **1**

Section-II

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

22. Observe the following table and answer the question (a) to (e) (Any 04)

TABLE: VISITOR

VisitorID	VisitorName	ContactNumber
V001	ANAND	9898989898
V002	AMIT	9797979797
V003	SHYAM	9696969696
V004	MOHAN	9595959595

(a) Write the name of most appropriate columns which can be considered as Candidate keys? **1**

(b) Out of selected candidate keys, which one will be the best to choose as Primary Key? **1**

(c) What is the degree and cardinality of the table? **1**

(d) Insert the following data into the attributes VisitorID, VisitorName and ContactNumber respectively in the given table VISITOR. **1**

VisitorID = "V004", VisitorName= "VISHESH" and ContactNumber= 9907607474

(e) Remove the table VISITOR from the database HOTEL. Which command will he used from the following:

a) DELETE FROM VISITOR;

b) DROP TABLE VISITOR; **1**

c) DROP DATABASE HOTEL;

d) DELETE VISITOR FROM HOTEL;

23. 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.

Consider the following CSV file (emp.csv):

1,Peter,3500

2,Scott,4000

3,Harry,5000

4,Michael,2500

5,Sam,4200

```
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("Number of 'S' names are ",count_s,"/",count_rec)
```

(a) Name the module he should import in Line 1 **1**
(b) In which mode, Priti should open the file to print data. **1**
(c) Fill in the blank in Line 2 to open the file. **1**
(d) Fill in the blank in Line3 to read the data from a csv file. **1**
(e) Write the output he will obtain while executing the above program. **1**

PART-B

Section-I

24. If given A=2,B=1,C=3, What will be the output of following expressions: **2**
(i) print((A>B) and (B>C) or(C>A))
(ii) print(A**B**C)

25 What is Trojan? Any two type of activities performed by Trojan **2**

OR

What is the difference between HTML and XML?

26 Expand the following terms: **2**
a. HTTP b. POP3 c. VOIP d.TCP

27 What do you understand the default argument in function? Which function parameter must be given default argument if it is used? Give example of function header to illustrate default argument

OR

Ravi a python programmer is working on a project, for some requirement, he has to define a function with name CalculateInterest(), he defined it as: **2**

```
def CalculateInterest (Principal, Rate=.06,Time): # code
```

But this code is not working, Can you help Ravi to identify the error in the above function and what is the solution.

28 Rewrite the following Python program after removing all the **syntactical errors** (if any), underlining each correction: **2**

```
def checkval:
   x = input("Enter a number")
   if  x % 2 =0:
      print (x, "is even")
   elseif  x<0:
      print (x, "should be positive")
   else;
      print (x, "is odd")
```

29 What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO. **2**

```
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):
    print (AR[K],end="#")
```

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

30 Define Primary Key of a relation in SQL. Give an Example using a dummy table. **2**

31 Consider the following Python code is written to access the record of CODE passed to function: Complete the missing statements: **2**

```
def Search(eno):
        #Assume basic setup import, connection and cursor is created
        query="select * from emp where empno=_____".format(eno)
        mycursor.execute(query)
        results = mycursor._____
        print(results)
```

32 Differentiate between DDL and DML with one Example each. **2**

33 What will be the output of following program: **2**

```
s="welcome2kv"
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)
```

Section-II

34 Write code in Python to calculate and display the frequency of each item in a list. **3**

35 Write a function COUNT_AND( ) in Python to read the text file "STORY.TXT" and count the number of times "AND" occurs in the file. (include AND/and/And in the counting) **3**

OR

Write a function DISPLAYWORDS( ) in python to display the count of words starting with "t" or "T" in a text file 'STORY.TXT'.

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

TABLE: SCHOOL

CODE	TEACHERNAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
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

i) SELECT SUM (PERIODS), SUBJECT FROM SCHOOL GROUP BY SUBJECT;

ii) SELECT TEACHERNAME, GENDER FROM SCHOOL, ADMIN WHERE DESIGNATION = 'COORDINATOR' AND SCHOOL.CODE=ADMIN.CODE;

iii) SELECT COUNT (DISTINCT SUBJECT) FROM SCHOOL;

37 Write a program to perform push operations on a Stack containing Student details as given in the following definition of student node: **3**

RNo integer
Name String
Age integer

```
def isEmpty(stk):
    if stk == [ ]:
        return True
    else:
        return False
def stk_push(stk, item):
# Write the code to push student details using stack.
```

OR

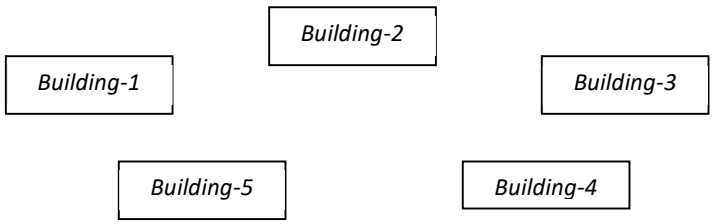
Write a program to perform pop operations on a Stack containing Student details as given in the following definition of student node:

RNo integer
Name String
Age integer

```
def isEmpty(stk):
    if stk == [ ]:
        return True
    else:
        return False
def stk_pop(stk):
# Write the code to pop a student using stack.
```

Section-III

38 PVS Computers decided to open a new office at Ernakulum, the office consist of Five Buildings and each contains number of computers. The details are shown below. **5**



Distance between the buildings

Building 1 and 2	20 Meters
Building 2 and 3	50 Meters
Building 3 and 4	120 Meters
Building 3 and 5	70 Meters
Building 1 and 5	65 Meters
Building 2 and 5	50 Meters

Building	No of computers
1	40
2	45
3	110
4	70
5	60

Computers in each building are networked but buildings are not networked so far. The Company has now decided to connect building also.

(i) Suggest a cable layout for connecting the buildings

(ii) Do you think anywhere Repeaters required in the campus? Why

(iii) The company wants to link this office to their head office at Delhi

(a) Which type of transmission medium is appropriate for such a link?

(b) What type of network would this connection result into?

(iv) Where server is to be installed? Why?

(v) Suggest the wired Transmission Media used to connect all buildings efficiently.

39 Write SQL queries for (i) to (v), which are based on the table: **SCHOOL and ADMIN** **5**

TABLE: SCHOOL

CODE	TEACHERNAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
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

i) To decrease period by 10% of the teachers of English subject.

ii) To display TEACHERNAME, CODE and DESIGNATION from tables SCHOOL and ADMIN whose gender is male.

iii) To Display number of teachers in each subject.

iv) To display details of all teachers who have joined the school after 01/01/1999 in descending order of experience.

v) Delete all the entries of those teachers whose experience is less than 10 years in SCHOOL table.

40 Write a function SCOUNT( ) to read the content of binary file “NAMES.DAT" and display number of records (each name occupies 20 bytes in file) where name begins from “S" in it.

For. e.g. if the content of file is:

SACHIN
AMIT
AMAN
SUSHIL
DEEPAK
HARI SHANKER

Function should display

Total Names beginning from “S” are 2 **5**

OR

Consider the following CSV file (emp.csv):

Sl,name,salary

1,Peter,3500
2,Scott,4000
3,Harry,5000
4,Michael,2500
5,Sam,4200

Write Python function DISPEMP( ) to read the content of file emp.csv and display only those records where salary is 4000 or above

****

Kendriya Vidyalaya Sangathan, Regional Office, Bhopal

Pre-Board Examination2020-21

Class- XII (Computer Science (083))

Marking Scheme

PART-A		
Section-I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21**. (award 1 mark for each correct answer)		
1.	a) def	**1**
2.	PUT	**1**
3.	writerow()	**1**
4.	h v e i l r l a o t	**1**
5.	['violet', 'indigo', 'green', 'red']	**1**
6.	(ii) each of the keys within a dictionary must be unique	**1**
7.	(ii)Tuple	**1**
8.	8	**1**
9.	FTP	**1**
10.	Raj is a social worker, one day he noticed someone is writing insulting or demeaning comments on his post. What kind of Cybercrime Raj is facing?	**1**
11.	UPDATE	**1**
12.	Relational Database management System	**1**
13.	Count (*)	**1**
14.	(b) Domain	**1**
15.	Co-axial	**1**
16.	(iii) del L[2]	**1**
17.	nohtyP Python	**1**
18.	show databases	**1**
19.	General Packet Radio Service (GPRS)	**1**
20.	b) Distinct	**1**
21.	a band of frequencies used for sending electronic signals	**1**

Section-II

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

22.	(a) VIsitorID and ContactNumber	**1**
	(b) VisitorID	**1**
	(c) Degree= 3 Cardinality=4	**1**
	(d) insert into VISITOR values (“V004”, “VISHESH”,9907607474)	**1**
	(b) DROP TABLE VISITOR;	**1**
23.	(a) csv	**1**
	(b) read mode	**1**
	(c) 'emp.csv'	**1**
	(d) reader	**1**
	(e) 2,Scott,4000 5,Sam,4200 Number of “S” names are 2/5	**1**

PART-B

Section-I

24.	(i) True (ii) 2	**2**
25	A Trojan horse or Trojan is a type of malware that is often disguised as legitimate software. Trojans can be employed by cyber-thieves and hackers trying to gain access to users' systems. activities performed by Trojan can be: Deleting data Blocking data Modifying data Copying data Disrupting the performance of computers or computer networks **OR**	**2**

HTML	XML
HTML is used **to display data** and focuses on how data looks.	XML is a software and hardware independent tool used **to transport and store data**. It focuses on what data is.
HTML is a **markup language** itself.	XML provides a **framework to define markup languages**.
HTML is **not case sensitive**.	XML is **case sensitive**.
HTML is a presentation language.	XML is neither a presentation language nor a programming language.
HTML **has its own predefined tags**.	You **can define tags according to your need**.
In HTML, it is **not necessary to use a closing tag**.	XML **makes it mandatory to use a closing tag**.
HTML is **static** because it is used to display data.	XML is **dynamic** because it is used to transport data.

<table>
<tr><td>26</td><td>a. HTTP-Hypertext transfer Protocol
b. POP3-Post office protocol ver. III
c. VOIP- Voice over internet Protocol
d. TCP- Transmission control protocol</td><td>2</td></tr>
<tr><td>27</td><td>Default argument in function- value provided in the formal arguments in the definition header of a function is called as default argument in function. They should always be from right side argument to the left in sequence. For example:
def func(a, b=2, c=5): # definition of function func( )
here b and c are default arguments
OR
In the function CalculateInterest (Principal, Rate=.06,Time) parameters should be default parameters from right to left hence either Time should be provided with some default value or default value of Rate should be removed</td><td>2</td></tr>
<tr><td>28</td><td>Rewrite the following Python program after removing all the syntactical errors (if any), underlining each correction:
def <u>checkval</u>: # checkval( )
x = <u>input("Enter a number")</u> # int(input(“Enter a number”))
if x % 2 =0:
print (x, "is even")
<u>elseif</u> x<0: # elif
print (x, "should be positive")
<u>else;</u> # else:
print (x, "is odd")</td><td></td></tr>
<tr><td>29</td><td>Maximum value of FROM = 3
Maximum value of TO = 4
(ii) 30#40#50#</td><td>2</td></tr>
<tr><td>30</td><td>Primary Key- one or more attribute of a relation used to uniquely identify each and every tuple in the relation. For Example : In the below Table Student, RollNo can be the Primary Key
<table>
<tr><th>RollNo</th><th>Name</th><th>Marks</th></tr>
<tr><td>1</td><td>Paridhi</td><td>90</td></tr>
<tr><td>2</td><td>Unnati</td><td>85</td></tr>
</table></td><td>2</td></tr>
<tr><td>31</td><td>{ } and fetchone()</td><td>2</td></tr>
<tr><td>32</td><td>DDL- Data definition language. Consists of commands used to modify the metadata of a table. For Example- create table, alter table, drop table
DML-Data manipulation language. Consist of commands used to modify the data of a table. For Example- insert, delete, update</td><td>2</td></tr>
<tr><td>33</td><td>vELCcME#Kk</td><td>2</td></tr>
<tr><td colspan="3">Section-II</td></tr>
<tr><td>34</td><td>L=[10,12,14,17,10,12,15,24,27,24]
L1=[ ]
L2=[ ]
for i in L:
if i not in L2:
c=L.count(i)
L1.append(c)
L2.append(i)</td><td>3</td></tr>
</table>

	print('Item','\t\t','frequency') for i in range(len(L1)): print(L2[i],'\t \t', L1[i])	
35	def COUNT_AND( ): count=0 file=open('STORY.TXT','r') line = file.read() word = line.split() for w in word: if w in ['AND','and','And']: count=count+1 file.close() print(count) *(½ Mark for opening the file)* *(½ Mark for reading word)* *(½ Mark for checking condition)* *(½ Mark for printing word)* **OR** def DISPLAYWORDS( ): count=0 file=open('STORY.TXT','r') line = file.read() word = line.split() for w in word: if w[0]=="T" or w[0]=="t": count=count+1 file.close() print(count) *(½ Mark for opening the file)* *(½ Mark for reading word)* *(½ Mark for checking condition)* *(½ Mark for printing word)*	**3**
36	i) ENGLISH 51 PHYSICS 76 MATHS 24 CHEMISTRY 27 ii) PRIYA RAI FEMALE LISA ANAND FEMALE iii) 4 *(1 mark for each correct answer)*	**3**
37	def stkpush(stk, item): stk.append(item) top=len(stk)-1 **OR** def stkpop(stk): if isEmpty( ): print("Underflow")	**3**

	else: item=stk.pop( ) print(item) if len(stk)==0: top=None else: top=len(stk)-1	
	Section-III	
38	(i) Any efficient layout with shortest Wire length (ii) Between 3 and 4 due to larger distance (iii) (a) Wireless (b) WAN (iv) Building-3 due to maximum no of Computers (v) Co- axial cable or fiber optics *(1 mark for each correct answer)*	**5**
39	i) update SCHOOL set PERIODS=0.9*PERIODS; ii) select SCHOOL.TEACHERNAME, SCHOOL.CODE, ADMIN.DESIGNATION from SCHOOL, ADMIN where gender='MALE'. iii) select SUBJECT, count(*) from SCHOOL group by SUBJECT; iv) select * from SCHOOL where DOJ>' 01/01/1999' order by EXPERIENCE desc; v) delete from SCHOOL where EXPERIENCE<10; *(1 mark for each correct answer)*	**5**
40	def SCOUNT( ): s=' ' count=0 with open('Names.dat', 'rb') as f: while(s): s = f.read(20) s=s.decode( ) if len(s)!=0: if s[0].lower()=='s': count+=1 print('Total names beginning from "S" are ',count) **OR** import csv def DISPEMP(): with open('emp.csv') as csvfile: myreader = csv.reader(csvfile,delimiter=',') print("%10s"%"EMPNO","%20s"%"EMP NAME","%10s"%"SALARY") for row in myreader: if int(row[2])>4000: print("%10s"%row[0],"%20s"%row[1],"%10s"%row[2])	**5**

Common Pre-Board Examination Chandigarh Region 2020-21

Class: XII **Sub: COMPUTER SCIENCE**

Max. Marks: 70 **Time: 3 HRS**

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

Question No.	**Part A**	Marks
	Section-I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	
1	Which of the following is valid arithmetic operator in Python: (i) // (ii)**?** (iii) < (iv) and	1
2	Namethe PythonLibrarymoduleswhichneedto be imported to invokethe following functions: **(i) sin( ) (ii) randint ( )**	1
3	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
4	Which is the correct form of declaration of dictionary? (i) Day={1:'monday',2:'tuesday',3:'wednesday'} (ii) Day=(1;'monday',2;'tuesday',3;'wednesday') (iii) Day=[1:'monday',2:'tuesday',3:'wednesday']	1

	(iv) Day={1'monday',2'tuesday',3'wednesday']	
5	Call the given function using KEYWORD ARGUMENT with values 100 and 200 def Swap(num1,num2): num1,num2=num2,num1 print(num1,num2)	1
6	Function can alter only Mutable data types? (True/False)	1
7	How can you access a global variable inside the function, if function has a variable with same name?	1
8	Stack is a data structure that follows_____ order a) FIFO b) LIFO c)FILO d) LILO	1
9	If the following code is executed, what will be the output of the following code? name="Computer Science with Python" print(name[2:10])	1
10	Write down the status of Stack after each operation: Stack = [10,20,30,40] where TOP item is 40 i) Pop an item from Stack ii) Push 60	1
11	---------- describe the maximum data transfer rate of a network or Internet connection.	1
12	Expand : a) SMTP b) GSM	1
13	Mahesh wants to transfer data within a city at very high speed. Write the wired transmission medium and type of network.	1
14	**What is a Firewall in Computer Network?** A. The physical boundary of Network B. An operating System of Computer Network C. A system designed to prevent unauthorized access D. A web browsing Software	1
15	A device used to connect dissimilar networks is called ..... a) hub b) switch c) bridge d)gateway	1
16	Which command is used to see the structure of the table/relation. a) view b) describe c) show d) select	1
17	A virtual table is called a	1
18	Which clause is used to remove the duplicating rows of the table?	1

	i) or ii) distinct iii) any iv)unique	
19	Which clause is used in query to place the condition on groups in MySql? i) where ii) having iii) group by iv) none of the above	1
20	Which command is used for counting the number of rows in a database? i) row ii) count iii) rowcount iv) row_count	1
21	A Resultset is an object that is returned when a cursor object is used to query a table. **True/False**	1
	SECTION - II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
22	**Relation : Employee** **id** | **Name** | **Designation** | **Sal** 101 | Naresh | Clerk | 32000 102 | Ajay | Manager | 42500 103 | Manisha | Clerk | 31500 104 | Komal | Advisor | 32150 105 | Varun | Manager | 42000 106 | NULL | Clerk | 32500 i. Identify the primary key in the table. Write query for the following ii. Find average salary in the table. iii. Display number of records for each individual designation.	1 1 1

	iv. Display number of records along with sum of salaries for each individual designation where number of records are more than 1.	1
	v. What is the degree and cardinality of the relation Employee?	1
23	Anuj Kumar of class 12 is writing a program to create a CSV file "user.csv" which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task. import _____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file f=open(' user.csv','_____') # Line 2 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	
	(a) Name the module he should import in Line 1.	1
	(b) In which mode, Anuj should open the file to add data into the file	1
	(c) Fill in the blank in Line 3 to read the data from a csv file.	1
	(d) Fill in the blank in Line 4 to close the file.	1
	(e) Write the output he will obtain while executing Line 5.	1

	Part - B	
	Section - I	
24	Evaluate the following expressions: (i) not(20>6) or (19>7)and(20==20) (ii) 17%20	2
25	What is Spam? How it affects the security of computer system? Or Differentiate between Bus Topology and Star Topology of Networks	2
26	What is default arguments in functions? Give Example. Or Differentiate between actual and formal arguments ? Explain with example.	2
27	Write the expanded names for the following abbreviated terms used in Networking and Communications: (i) CDMA (ii) HTTP (iii) XML (iv) URL	2
28	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. 30=To for K in range(0,To) IF k%4==0: print (K*4) Else: print (K+3)	2
29	Consider the following code: import math import random print(str(int(math.pow(random.randint(2,4),2))),end= ' ') print(str(int(math.pow(random.randint(2,4),2))),end= ' ') print(str(int(math.pow(random.randint(2,4),2)))) What could be the possible outputs out of the given four choices? i) 2 3 4 ii) 9 4 4 iii)16 16 16 iv)2 4 9	2
30	What do you understand by the term type conversion? Explain with suitable example	2

31	What is a cursor and how to create it in Python SQL connectivity?	2
32	What is Degree and Cardinality in relational table?	2
33	What will be the output of following code? def display(s): l = len(s) m="" for i in range(0,l): if s[i].isupper(): m=m+s[i].lower() elif s[i].isalpha(): m=m+s[i].upper() elif s[i].isdigit(): m=m+"$" else: m=m+"*" print(m) display("EXAM20@cbse.com")	2
	SECTION - II	
34	Write a Python function to sum all the numbers in a list. Sample List : [8, 2, 3, 0, 7] Expected Output : 20	3
35	Write a function in python to read lines from file “POEM.txt” and display all those words, which has two characters in it. For e.g. if the content of file is O Corona O Corona Jaldi se tum Go na Social Distancing ka palan karona sabse 1 meter ki duri rakhona Lockdown me ghar me ho to online padhai karona O Corona O Corona Jaldi se tum Go na **Output should be : se Go na ka ki me me ho to se Go na**	3

Or

Write a function COUNT() in Python to read contents from file "REPEATED.TXT", to count and display the occurrence of the word "Catholic" or "mother".

For example:

If the content of the file is

"Nory was a **Catholic** because her **mother** was a **Catholic**, and Nory's **mother** was a **Catholic** because her father was a **Catholic**, and her father was a

Catholic because his **mother** was a **Catholic** , or had been

The function should display:

Count of Catholic, mother is 9

36 Write the outputs of the SQL queries (i) to (iii) based on the relation COURSE — 3

COURSE

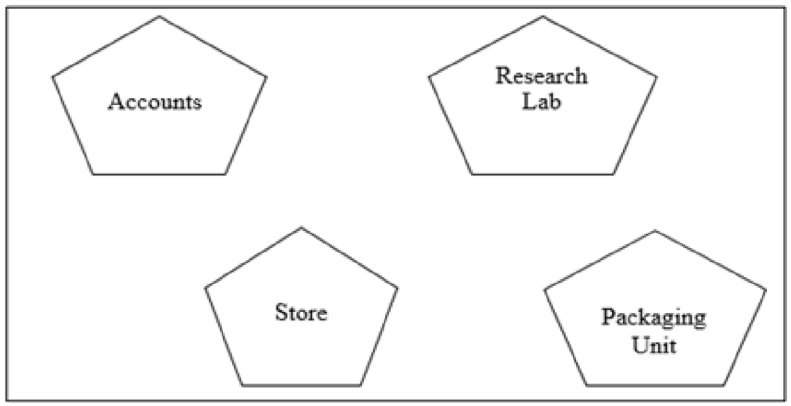
CID	CNAME	FEES	STARTDATE	TID
C201	AGDCA	12000	2018-07-02	101
C202	ADCA	15000	2018-07-15	103
C203	DCA	10000	2018-10-01	102
C204	DDTP	9000	2018-09-15	104
C205	DHN	20000	2018-08-01	101
C206	O LEVEL	18000	2018-07-25	105

(i) SELECT DISTINCT TID FROM COURSE;

(ii) SELECT TID, COUNT(*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1;

(iii) SELECT COUNT(*), SUM(FEES) FROM COURSE WHERE STARTDATE< '2018-09-15';

37 Write A Function Python, Make Push(Package) and Make Pop (Package) to add a new Package and delete a Package form a List Package Description, considering them to act as push and pop operations of the Stack data structure. — 3

	Or Write InsQueue(Passenger) and DelQueue(Passenger) methods/function in Python to add a new Passenger and delete a Passenger from a list 'names' , considering them to act as insert and delete operations of the Queue data structure.	
	SECTION - III	
38	Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below:  Distances between various buildings are as follows: 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 No of Computers	5

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

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

i) Suggest a cable layout of connections between the buildings.

ii) Suggest the most suitable place (i.e. buildings) to house the server of this organization.

iii) Suggest the placement of the Repeater device with justification.

iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

(v) Suggest the placement of the Hub/ Switch with justification.

39 Write SQL commands for the following queries (i) to (v) on the basis of relation Mobile Master and Mobile Stock. 5

MobileMaster

M_Id	M_Company	M_Name	M_Price	M_Mf_Date
MB001	Samsung	Galaxy	4500	2013-02-12
MB003	Nokia	N1100	2250	2011-04-15
MB004	Micromax	Unite3	4500	2016-10-17
MB005	Sony	XperiaM	7500	2017-11-20
MB006	Oppo	SelfieEx	8500	2010-08-21

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

(i) Display the Mobile Company, Name and Price in descending order of their manufacturing date.

(ii) List the details of mobile whose name starts with "S" or ends with "a".

(iii) Display the Mobile supplier & quantity of all mobiles except "MB003".

(iv) List showing the name of mobile company having price between 3000 & 5000.

(v) Display M_Id and sum of Moble quantity in each M_Id.

40

1. Consider an employee data, Empcode, empname and salary. Write python function to create binary file emp.dat and store their records.
2. write function to read and display all the records

Or

Consider a binary file emp.dat having records in the form of dictionary. E.g {eno:1, name:"Rahul", sal: 5000}
write a python function to display the records of above file for those employees who get salary between 25000 and 30000

5

Common Pre-Board Examination Chandigarh Region 2020-21

Class: XII **Sub: COMPUTER SCIENCE**

Max. Marks: 70 **Time: 3 HRS**

Marking Scheme

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.

2. Both Part A and Part B have choices.

3. Part-A has 2 sections:

a. Section – I is short answer questions, to be answered in one word or one line.

b. Section – II has two case studies questions. Each case study has 4 case-based subparts. An examinee is to attempt any 4 out of the 5 subparts.

4. Part - B is Descriptive Paper.

5. Part- B has three sections

a. Section-I is short answer questions of 2 marks each in which two question have internal options.

b. Section-II is long answer questions of 3 marks each in which two questions have internal options.

c. Section-III is very long answer questions of 5 marks each in which one question has internal option.

6. All programming questions are to be answered using Python Language only.

Question No.	**Part A**	Marks
	Section-I Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.	
1	(i) // **(1 mark for correct answer)**	1
2	(i) math(ii) random **(1/ 2 mark for each module)**	1
3	(ii) fp.tell( )	1

	(1 mark for each correct type)	
4	(i) Day={1:'monday',2:'tuesday',3:'wednesday'} (1markforcorrectanswer)	1
5	Swap(num1=100,num2=200) 1markforcorrectanswer)	1
6	True	1
7	Using the keyword global	1
8	LIFO	1
9	mputer S	1
10	i) [10,20,30] ii)[10,20,30,60]	1
11	Bandwidth	1
12	a) Simple Mail Transfer Protocol b) Global System for Mobile Communication	1
13	Wired transmission medium – Optical fiber cable Type of network – MAN.	1
14	C. A system designed to prevent unauthorized access.	1
15	d) gateway	1
16	b) describe	1
17	view	1
18	ii)distinct	1
19	ii)having	1
20	iii) rowcount	1
21	True	1
	SECTION - II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
22	i) id ii) Ans. select avg(sal) from employee;	1 1

	iii) Ans. select designation, count(*) from employee group by designation; iv) Ans. select designation, count(*), sum(sal) from employee group by designation having count(*)>1; v) Degree : 4 Cardinality : 6 1 mark for each correct answer (ANY FOUR)	1 1 1
23	1 mark for each correct answer (ANY FOUR) (a) Line 1 : csv (b) Line 2 : a (c) Line 3 : reader (d) Line 4 : close() (e) Line 5 : Arjun 123@456 Arunima aru@nima Frieda myname@FRD	1 1 1 1 1
	Part - B	
	Section - I	
24	(i) True (ii) 17 1 Mark for each correct answer	2
25	2 marks for correct Answer.	2
26	2 marks for correct Answer	2
27	Code Division Multiple Access Hyper Text Transfer Protocol Extensible Markup Language Uniform Resource Locator (½ Marks for each correct answer)	2
28	To=30 for K in range(0,To): if K%4==0:	2

	print(K*4) else: print(K+3) 2 marks for correct error detection	
29	Possible outputs : ii) , iii) randint will generate an integer between 2 to 4 which is then raised to power 2, so possible outcomes can be 4,9 or 16	2
30	2 marks for correct answer	2
31	2 marks for correct answer	2
32	2 marks for correct answer	2
33	exam$$*CBSE*COM 2 marks for correct output	2
	Section - II	
34	def sum(numbers): total = 0 for x in numbers: total += x return total (2 Marks for Logic 1 mark for function definition)	3
35	def TwoCharWord(): f = open('poem.txt') count = 0 for line in f: words = line.split() for w in words: if len(w)==2: print(w,end=' ') (2 Marks for Logic 1 mark for function definition) or	3

	def COUNT(): f = open('REPEATED.txt') count = 0 for line in f: words = line.split() for w in words: if w.lower()=='catholic' or w.lower()=='mother': count+=1 print('Count of Catholic,mother is',count) (2 Marks for Logic 1 mark for function definition)	
36	(i) DISTINCT TID 101 103 102 104 105 (1 mark for correct Answer) (ii) TIDCOUNT(*)MIN(FEES) 101 2 12000 (1 mark for correct Answer) (iii) COUNT(*)SUM(FEES) 4 65000 (1 mark for correct Answer)	3
37	defMakePush(Package):	3

	a=int(input("enterpackagetitle:")) Package.append(a) defMakePop(Package): if(Package==[]): print("Stackempty") else: print("Deletedelement:",Package.pop()) (½markforMakePush() header) (½markfor addingvalueinlist) (½markforMakePop() header) (½markforcheckingemptystack and displaying“Stackempty”) (½markfordisplayingthevaluetobedeleted)(½markfor deletingvaluefromlist) 3 marks for correct answer.	
	Section - III	
38	(i) 1 Mark for correct Layout. (ii) Research Lab (1 Mark) (iii) 1 Mark for correct Justification. (iv) Antivirus/ Firewall (1 Mark for Correct Answer) (v) 1 Mark for correct Justification.	5

39	(i) SELECT M_Company, M_Name, M_Price FROM MobileMasterORDER BY M_Mf_Date DESC; (½ mark for correct SELECT) (½ mark for correct ORDER BY) (ii) SELECT * FROM MobileMaster WHERE M_Name LIKE “S%” or M_Name LIKE “%a”; (½ mark for correct SELECT) (½ mark for correct WHERE clause) (iii) SELECT M_Supplier, M_Qty FROM MobileStock WHERE M_Id <>“MB003”; (½ mark for correct SELECT) (½ mark for correct WHERE clause) (iv) SELECT M_Company FROM MobileMaster WHERE M_PriceBETWEEN 3000AND 5000; (½ mark for correct SELECT) (½ mark for correct BETWEEN clause) (v) SELECT M_Id, SUM(M_Qty) FROM MobileStock GROUP BY M_Id; (½ mark for correct SELECT) (½ mark for correct Group By)	5
40	1. 2.5 marks for first part ½ mark for import ½ mark for opening a file 1 marks for input and making object ½ for dump command 2. 2.5 marks for 2 part ½ mark for import ½ mark for opening a file ½ marks for try and except or any other loop	5

	½ for load command ½ mark for display or import pickle def search(): f=open(“emp.dat”,”rb”) while True: try: d=pickle.load(f) if(d[‘sal’]>=25000 and d[‘sal’]<=30000): print(d) except EOFError: break f.close() ½ mark for import ½ mark for function ½ mark for opening a file 2 marks for load and matching with if ½ mark for closing a file	

END OF THE MARKING SCHEME

KENDRIYA VIDYALAYA SANGATHAN, CHENNAI REGION
PRACTICE TEST 2020 – 21
CLASS XII

Max. Marks: 70 **Subject**: Computer Science (083) **Time**: 3 Hrs.

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.

2. Both Part A and Part B have choices.

3. Part-A has 2 sections:

- ***a. Section – I is short answer questions, to be answered in one word or one line.***
- ***b. Section – II has two case studies questions. Each case study has 4 case-based sub-parts. An examinee is to attempt any 4 out of the 5 subparts.***

4. Part - B is Descriptive Paper and has 3 sections:

- ***a. Section-I is short answer questions of 2 marks each in which two question have internal options.***
- ***b. Section-II is long answer questions of 3 marks each in which two questions have internal options.***
- ***c. Section-III is very long answer questions of 5 marks each in which one question has internal option.***

5. All programming questions are to be answered using Python Language only.

Part – A
Section-I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.

1 Find the invalid identifier from the following **1**

a) Subtotal b) assert c) temp_calc d) Name2

2 Given the list Lst = [12, 34, 4, 56, 78, 22, 78, 89], find the output of **1**
print(Lst[1:6:2])

3 Which of the following functions do we use to write data in a binary file? **1**

a) writer( ) b) output( ) c) dump( ) d) send( )

4 Which operator is used for replication? **1**

a) + b) % c) * d) //

5 Give the output of the following code: **1**

```
L = [ 1,2,3,4,5,6,7]
B = L
B[3:5] = 90,34
print(L)
```

6	What is the value of the expression 4+4.00, 2**4.0	**1**
7	A tuple is declared as T = (1,2), (1,2,4), (5,3) What will be the value of min(T) ?	**1**
8	Which of the following functions generates an integer? a) uniform( ) b) randint( ) c) random( ) d) None of the above	**1**
9	Name the protocol used for remote login.	**1**
10	Which of the following is not done by cyber criminals? a) Unauthorized account access b) Mass attack using Trojans as botnets c) Report vulnerability in any system d) Email spoofing and spamming	**1**
11	In SQL, name the clause that is used to place condition on groups.	**1**
12	In SQL, which command is used to change the structure of already created table.	**1**
13	Which operator performs pattern matching in SQL?	**1**
14	What does the following function result into? count(field_name)	**1**
15	Name the wired transmission media which has a higher bandwidth.	**1**
16	Name the mutable data types in Python.	**1**
17	What is the output of the following code: for i in range(-3,4,2): print(i, end = '$')	**1**
18	In SQL, what are aggregate functions?	**1**
19	How many Primary and Foreign keys can a table have?	**1**
20	Name the network device that connects dissimilar networks.	**1**
21	Arrange the following media in decreasing order of transmission rates. Twisted Pair Cables, Optical Fiber, Coaxial Cables.	**1**

Section-II

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

22 As a database administrator, answer any 4 of the following questions:

Name of the table : **SOFTDRINK**

The attributes are as follows:

Drinkcode, Calories - Integer

Price - Decimal

Dname - Varchar of size 20

Drinkcode	Dname	Price	Calories
101	Lime and Lemon	20.00	120
102	Apple Drink	18.00	120
103	Nature Nectar	15.00	115
104	Green Mango	15.00	140
105	Aam Panna	20.00	135
106	Mango Juice Bahar	12.00	150

a) Identify the attributes that can be called Candidate keys. **1**

b) What is the cardinality and degree of the table SOFTDRINK. **1**

c) Include the following data in the above table. **1**

Drinkcode = 107, Dname = “Milkshake” and Calories = 125

d) Give the command to remove all the records from the table. **1**

e) Write a query to create the above table with Drinkcode as the Primary Key. **1**

23 Krishna of class 12 is writing a program to read the details of Sports performance and store in the csv file “Sports.csv” delimited with a tab character. As a programmer, help him to achieve the task.

[Answer any 4].

```
import _____                    # Line 1
f = open("Sports.csv","a")
wobj = csv._____ (f, delimiter = '\t')        # Line 2
wobj.writerow( ['Sport', 'Competitions', 'Prizes Won'] )
ans = 'y'
i = 1

while ans == 'y':
   print("Record :", i)
   sport  = input("Sport Name :")
   comp = int(input("No. of competitions participated :"))
   prize =  int(input("Prizes won:"))
   record = _____    # Line 3
   wobj._____ (rec)      # Line 4
   i += 1
   ans = input("Do u want to continue ? (y/n) :")
f._____      # Line 5
```

a) Name the module he should import in Line 1 **1**

b) To create an object to enable to write in the csv file in Line 2 **1**

c) To create a sequence of user data in Line 3 **1**

d) To write a record onto the writer object in Line 4 **1**

e) Fill in the blank in Line 5 to close the file. **1**

Part – B

Section – I

24 Evaluate the following expressions: **2**

a) 2 ** 3 ** 2

b) 7 // 5 + 8 * 2 / 4 – 3

25 Give the differences between HTML and XML. **2**

OR

Differentiate between Circuit and Packet Switching.

26 Expand the following terms: **2**

a) Wi-Fi b) GPRS c) VoIP d) IRC

27 What do you understand by local and global scope of variables? How can you access a global variable inside the function, if function has a variable with same name. **2**

OR

Explain with a code about Keyword arguments and Default arguments.

28 Rewrite the following code after removing the error(s). Underline each correction. **2**

```
for name in [ ‘Shruthi’,’Priya’,’Pradeep’,’Vaishnav’):
   print name
   if name[0] = ‘P’
      break
   else:
      print(‘Over”)
      print(“Done”)
```

29 Consider the following code and find out the possible output(s) from the options given below. Also write the least and highest value that can be generated. **2**

```
import random as r
print(10 + r.randint(10,15) , end = ‘ ‘)
print(10 + r.randint(10,15) , end = ‘ ‘)
print(10 + r.randint(10,15) , end = ‘ ‘)
print(10 + r.randint(10,15))
```

i) 25 25 25 21
ii) 23 27 22 20
iii) 23 22 25 20
iv) 21 25 20 24

30 What do understand by an Alternate key? Give a suitable example to support your answer. **2**

31 Answer the following : **2**

i) Name the package for connecting Python with MySQL database.
ii) What is the purpose of cursor object?

32 How is equi-join different from natural-join? Give example. **2**

33 Find the output of the following code : **2**

```
def change(s):
   d = {"UPPER" : 0, "LOWER" : 0 }
   for c in s:
      if c.isupper():
         d["UPPER"] += 1
      elif c.islower():
         d["LOWER"] += 1
      else:
         pass
   print("Upper case count :", d["UPPER"])
   print("Lower case count :", d["LOWER"])
change("School Days are Happy")
```

Section – II

34 Write a program to input a date as an integer in the format MMDDYYYY. The program should call a user-defined function to print out the date in the format <Monthname> <day>, <year> **3**

Example: Input - 11272020
Output - November 27, 2020

35 Write a function that counts and display the number of 5 letter words in a text file "Sample.txt" **3**

OR

Write a function to display those lines which start with the letter "S" from the text file "MyNotes.txt"

36 Write the outputs of the SQL queries i) to iii) based on the tables given below: **3**

Table: ITEM

ID	Item_Name	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	CName	City	ID
01	N Roy	Delhi	LC03
06	R Singh	Mumbai	PC03
12	R Pandey	Delhi	PC06
15	C Sharma	Delhi	LC03
16	K Agarwal	Bangalore	PC01

i) Select Item_Name, max(Price), count(*) from Item group by Item_Name ;
ii) Select CName, Manufacturer from Item, Customer where Item.ID = Customer.ID;
iii) Select Item_Name, Price * 100 from Item where Manufacturer = "ABC";

37 Write AddCustomer(Customer) method in Python to add a new customer, considering it to act as a PUSH operation of the stack datastructure. Also display the contents of the Stack after PUSH operation. Details of the Customer are : CID and Name. **3**

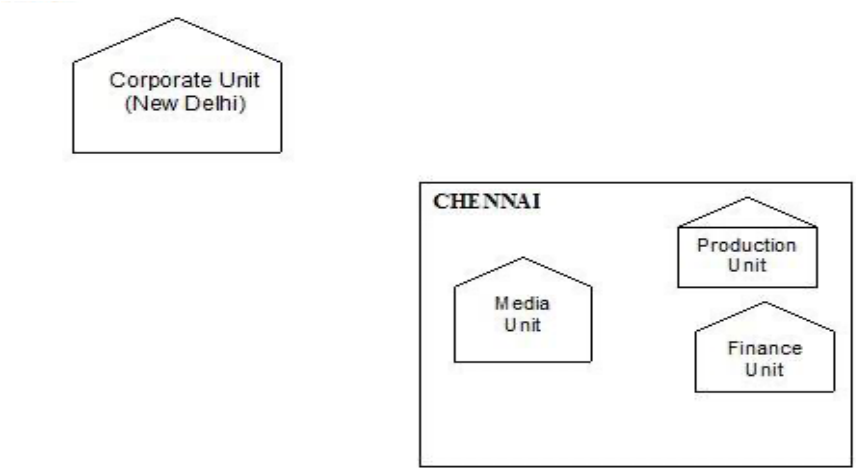
OR

Write RemoveCustomer(Customer) method in Python to remove a Customer, considering it to act as a POP operation of the stack datastructure. Also return the value deleted from stack.

Section – III

38 "China Middleton Fashion" is planning to expand their network in India, starting with two cities in India to provide infrastructure for distribution of their product. The company has planned to set up their main office units in Chennai at three locations and have named their offices as "Production Unit", "Finance Unit" and "Media Unit". The company has its corporate unit in New Delhi. A rough layout of the same is as follows: **5**

INDIA



Approximate distances between these Units is as follows:

From	To	Distance
Production	Finance Unit	70 Mtr
Production	Media Unit	15 KM
Production	Corporate Unit	2112 KM
Finance	Media Unit	15 KM

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

Production Unit	150
Finance Unit	35
Media Unit	10
Corporate Unit	30

i) Suggest the kind of network required (out of LAN, MAN, WAN) for connecting each of the following office units:
   a. Production Unit and Media Unit
   b. Production Unit and Finance Unit

ii) Which of the following communication media, will you suggest to be procured by the company for connecting their local offices in Chennai for very effective communication? Ethernet Cable, Optical Fiber, Telephone Cable.

iii) Which of the following devices will you suggest for connecting all the computers within each of their office units?
*Switch/Hub *Modem *Telephone

iv) Suggest a cable layout for connecting the company's local office units in Chennai.

v) Suggest the most suitable place to house the server for the organization with suitable reason.

39 Write SQL commands for i) to v) based on the relations given below. **5**

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	21	180	18	03-Nov-09

Table: Suppliers

Scode	Sname
21	Premium Stationary
23	Soft Plastics
22	Tetra Supply

i) To display details of all the items in the Store table in descending order of LastBuy.

ii) To display Itemno and item name of those items from store table whose rate is more than 15 rupees.

iii) To display the details of those items whose supplier code is 22 or Quantity in store is more than 110 from the table Store.

iv) To display minimum rate of items for each Supplier individually as per Scode from the table Store.

v) To display ItemNo, Item Name and Sname from the tables with their corresponding matching Scode.

40 A binary file “Items.dat” has structure as [Code, Description, Price]. **5**

i. Write a user defined function MakeFile( ) to input multiple items from the user and add to Items.dat

ii. Write a function SearchRec(Code) in Python which will accept the code as parameter and search and display the details of the corresponding code on screen from Items.dat.

OR

A binary file “Bank.dat” has structure as [account_no, cust_name, balance].

i. Write a user-defined function addfile( ) and add a record to Bank.dat.

ii. Create a user-defined function CountRec( ) to count and return the number of customers whose balance amount is more than 100000.

22. A store is considering maintaining their inventory using SQL to store the data. As a database administer, Amit has decided that:

Name of the database - ITEM

Name of the table - PRODUCT

The attributes of Product are as follows:

PNo - numeric

Name - character of size 20

PurchaseDate - Date

Qty – numeric

TABLE : PRODUCT

PNo	Name	Purchasedate	Qty
2005	Notebook Classic	23	60
2003	Ball Pen 0.25	22	50
2002	Get Pen Premium	21	150
2006	Get Pen Classic	21	250
2001	Eraser Small	22	220
2004	Eraser Big	22	110
2009	Ball Pen 0.5	21	180

KENDRIYA VIDYALAYA SANGATHAN: CHENNAI REGION
PRACTICE TEST 2020 – 21
CLASS XII

Max. Marks: 70 **Subject**: Computer Science (083) **Time**: 3 Hrs.

MARKING SCHEME

	Part – A **Section – I**	
1	b) assert	1
2	[34, 56, 22]	1
3	c) dump( )	1
4	c) *	1
5	[1, 2, 3, 90, 34, 6, 7]	1
6	(8.0, 16.0)	1
7	(1, 2)	1
8	b) randint( )	1
9	TELNET	1
10	c) Report vulnerability in any system	1
11	HAVING	1
12	Alter table	1
13	LIKE	1
14	It returns the number of non-null records from the field.	1
15	Optical Fiber	1
16	List, Dictionary	1
17	-3$-1$1$3$	1
18	These functions work with data of multiple rows at a time and return a single value.	1
19	Primary Key – 1 Foreign Key – Many	1
20	Gateway	1
21	Optical Fiber, Coaxial Cables, Twisted Pair Cables	1
	Section – II	
22	a) Drinkcode and Dname	1
	b) Cardinality = 6, Degree = 4	1
	c) Insert into softdrink(drinkcode,dname,calories) values (107,"Milkshake",125);	1
	d) Delete from softdrink;	1
	e) Create table softdrink(drinkcode integer(5) Primary Key, dname varchar(20), Price decimal(6,2), calories integer(5));	1
23	a) Line 1 : csv	1
	b) Line 2 : writer	1
	c) Line 3 : [sport, comp, prize]	1
	d) Line 4 : writerow	1
	e) close( )	1

Part – B
Section – I

24 (2)

a) 512
b) 2.0

25 (2)

HTML	XML
Tags are predefined	Tags are not predefined.
Tags may be empty or container type	Tags must be of container type
It is not case sensitive.	It is case sensitive.

OR

Circuit Switching	Packet Switching
A complete physical connection is established between the sender and the receiver and then the data is transmitted.	Follows a store and forward principle for fixed packets which are to be transferred.
Lesser data transfer rate	Faster data transfer rate.

26 (2)

a) Wi-Fi - Wireless Fidelity
b) GPRS – General Packet Radio Service
c) VoIP - Voice over Internet Protocol
d) IRC – Internet Relay Chat

27 (2)

Local variables are those which are defined in a block. **Global variables** are those which are defined in the main scope of the program.
To access a global variable within the function we need to use the statement global <var_name>

OR

Keyword Arguments: They are the named arguments with assigned values being passed in the function call statement.
Default Arguments: An argument having a value in the function header. It is used when a matching argument is not passed in the function call statement.

28 (2)

```
for name in [ 'Shruthi','Priya','Pradeep','Vaishnav']:
   print ( name )
   if name[0] == 'P':
      break
   else:
      print("Over")
      print("Done")
```

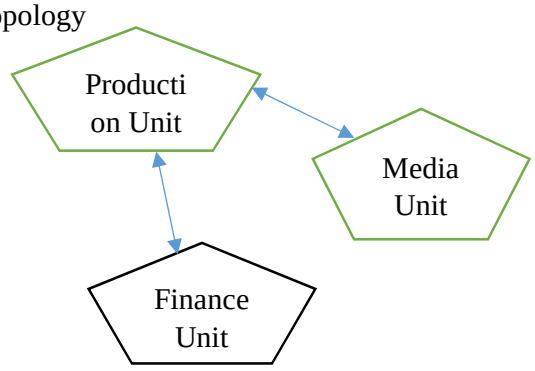
29 (2)

Possible outputs : i), iii) and iv)
Least value : 10
Highest value : 15

30 (2)

Those candidate keys which are not made the Primary key are called the Alternate keys.
Example : In Student table with structure (Admno, Rollno, Name, Marks)
If Admno is made the Primary key, then Rollno will be the Alternate key.

31	i) import mysql.connector ii) It is the object that helps to execute the SQL queries and facilitate row by row processing of records in the resultset.	2
32	**Equi-join :** It is a sql join where we use the equal sign as the comparison operator while specifying the join condition. In this, the common column from both the tables will appear twice in the output. **Natural join :** It is similar to Equi-join but only one of the identical columns exist in the output. Example : select * from student, course where course.cid = student.cid; (Equi-join) Select * from student natural join course where course.cid = student.cid; (Natural join)	2
33	Upper case count : 3 Lower case count : 15	2
	Section – II	
34	date=input("Enter date:") def pp(date): months = {1:'January', 2:'February', 3:'March', 4:'April', 5:'May',\ 6:'June', 7:'July', 8:'August', 9:'September', 10:'October',\ 11:'November', 12:'December'} mon = months[int(date[:2])] day = date[2:4] year = date[4:] fdate = mon + ' ' + day + ',' + year print(fdate) pp(date)	3
35	def count_words( ): c = 0 f = open("Sample.txt") line = f.read() word = line.split() for w in word: if len(w) == 5: c += 1 print(c) count_words( ) **OR** def count_lines( ): c = 0 f = open("MyNotes.txt") line = f.readlines() for w in line: if w[0] == 'S': print(w) count_lines( )	3

36	i) Personal Computer 37000 3 Laptop 57000 2 ii) N Roy PQR R Singh XYZ R Pandey COMP C Sharma PQR K Agarwal ABC iii) Personal Computer 3500000 Laptop 5500000	3
37	Top = None def AddCustomer(Customer): cid = int(input("Enter customer id:")) Name = input("Enter customer name:")) Customer.append ([cid,Name]) Top = len(Customer) - 1 print("The stack is :", Customer) **OR** def RemoveCustomer(Customer): if Customer == [ ]: print("Underflow") else: p = Customer.pop( ) if len(Customer) == 0: Top = None else: Top = len(Customer) – 1 return p	3
	Section - III	
38	(i)(a) Production Unit and Media Unit :MAN (b)Production Unit and Finance Unit:LAN (ii) Switch/Hub (iii) Optical fiber (iv) Star Topology  (v) Server should be placed in the Production Unit as it has maximum number of computers.	5

39	(i) Select * from Store order by Lastbuy; (ii) Select Itemno, Item from store where rate > 15; (iii) Select * from store where scode = 22 or qty > 110; (iv) Select scode, min(rate) from store group by scode; (v) Select Itemno, Item, Store.scode, Sname from Store, Suppliers where Store.scode = Suppliers.scode;	5
40 i.	import pickle as p def MakeFile( ): f = open (“Items.dat”, “ab”) Item = [ ] ans = ‘y’ while ans == ‘y’: code = input(“Enter Item Code :”) desc = input(“Enter description :”) price = float(input(“Enter price:”)) Item.append ([code,desc,price]) ans = input(“Add more record? (y/n) :”) p.dump(Item,f) f.close( )	5
ii.	def SearchRec(code): f = open("Items.dat", "rb") Item = [ ] found = False while True: try: Item = p.load(f) except: break for e in Item: if e[0] == code : print(e[0],"\t",e[1],"\t",e[2]) found = True break if found == False: print("No such record")	
	OR	
i.	import pickle as p def addfile( ): f = open(“bank.dat”,”wb”) acc_no = int(input(“Enter account number: “)) cust_name = input(“Enter name:”) bal = int(input(“Enter balance”)) rec = [acc_no, cust_name, bal] p.dump(rec, f) f.close()	

ii.	def CountRec( ): f = open(“bank.dat”,”rb”) c = 0 try: while True: rec = p.load(f) if rec[2] > 100000: c += 1 except: f.close() return c	

KENDRIYA VIDYALAYA SANGATHAN DELHI REGION

1ST PRE-BOARD EXAMINATION 2020-21

COMPUTER SCIENCE NEW (Code: 083)

CLASS: XII

SET-1

Time: 3 hrs. **M.M.: 70**

Instructions:

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

PART-A

Section-I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no. 1 to 21.

Q. No.	Option No.	Questions Description	Marks Allotted
1.		Identify the invalid keyword in Python from the following: (a) True (b) None (c) Import (d) return	1
2.		Write the output of the following python expression: `print((4>5) and (2!=1) or (4<9))`	1
3.		Write the importance of passing file mode while declaring a file object in data file handling.	1
4.		Find the operator which cannot be used with a string in Python from the following: (a) + (b) in (c) * (d) //	1
5.		Write the output of the following python statements: `Array=[8,5,3,2,1,1]` `print(Array[-1:-6:-1])`	1
6.		Consider the tuple in python named DAYS=(”SUN”,”MON”,”TUES”).	1

		Identify the invalid statement(s) from the given below statements: **1. S=DAYS[1]** **2. print(DAYS[2])** **3. DAYS[0]="WED"** **4. LIST=list(DAYS)**	
7.		**Declare a dictionary in python named QUAD having Keys(1,2,3,4) and Values("India","USA","Japan","Australia")**	**1**
8.		**_____ is a collection of similar modules or packages that are used to fulfills some functional requirement for a specific type of application.**	**1**
9.		**Website incharge KABIR of a school is handling downloading/uploading various files on school website. Write the name of the protocol which is being used in the above activity.**	**1**
10.		**What is its use of Data encryption in a network communication?**	**1**
11.		**In SQL, write the name of the aggregate function which is used to calculate & display the average of numeric values in an attribute of a relation.**	**1**
12.		**Write an SQL query to display all the attributes of a relation named "TEST" along with their description.**	**1**
13.		**What is the use of LIKE keyword in SQL?**	**1**
14.		**Which of the following is NOT a DML command?** **1. SELECT 2. DELETE 3. UPDATE 4. DROP**	**1**
15.		**Give the full form of the following:** **(a) URL (b) TDMA**	**1**
16.		**Identify the output of the following python statements if there is no error. Otherwise, identify the error(s):** `Str1="Computer2020"` `Str2=tuple(Str1[8:12])` `Str3=list(Str2)` `print(Str3,"#",len(Str3))`	**1**
17.		**List one common property of a String and a Tuple.**	**1**
18.		**What is the purpose of following SQL command:** **SHOW DATABASES;**	**1**
19.		**Differentiate between Bps & bps.**	**1**
20.		**Identify the error in the following SQL query which is expected to delete all rows of a table TEMP without deleting its structure and write the correct one:** **DELETE TABLE TEMP;**	**1**
21.		**Identify the Guided and Un-Guided Transmission Media out of the following:** **Satellite, Twisted Pair Cable, Optical Fiber, Infra-Red waves**	**1**

PART-A
Section-II

Both the case study-based questions are compulsory. Attempt any 4 out of the 5 subparts from each question. Each question carries 1 mark.

22. **A CD/DVD Shop named "NEW DIGITAL SHOP" stores various CDs & DVDs of songs/albums/movies and use SQL to maintain its records. As a Database Administrator, you have decided the following:**

- **Name of Database - CDSHOP**
- **Name of Relation - LIBRARY**
- **Attributes are:-**
  - **(a) CDNO - Numeric values**
  - **(b) NAME - Character values of size (25)**
  - **(c) QTY - Numeric values**
  - **(d) PRICE - Decimal values**

Table: LIBRARY

CDNO	NAME	QTY	PRICE
10001	Indian Patriotic	20	150
10004	Hanuman Chalisa	15	80
10005	Instrumental of Kishore	25	95
10003	Songs of Diwali	18	125
10006	Devotional Krishna Songs	14	75
10002	Best Birthday Songs	17	NULL

Answer the following questions based on the above table LIBRARY:-

(a)	**Write the Degree & Cardinality of the relation LIBRARY.**	**1**
(b)	**Identify the best attribute which may be declared as Primary key.**	**1**
(c)	**Insert the following record in the above relation:** **(10009, "Motivational Songs", 15, 70)**	**1**
(d)	**Write an SQL query to display the minimum quantity.**	**1**
(e)	**Database administrator wants to count the no. of CDs which does not have any Price value. Write the query for the same.**	**1**

23. **Abhisar is making a software on "Countries & their Capitals" in which various records are to be stored/retrieved in CAPITAL.CSV data file. It consists some records(Country & Capital). He has written the following code in python. As a programmer, you have to help him to successfully execute the program.**

```
import _____                                    # Statement-1

def AddNewRec(Country,Capital):      # Fn. to add a new record in CSV file
    f=open("CAPITAL.CSV",_____)              # Statement-2
    fwriter=csv.writer(f)
    fwriter.writerow([Country,Capital])
    f._____                                     # Statement-3

def ShowRec():                                  # Fn. to display all records from CSV file
    with open("CAPITAL.CSV","r") as NF:
        NewReader=csv._____(NF)          # Statement-4
        for rec in NewReader:
```

	print(rec[0],rec[1]) **AddNewRec("INDIA","NEW DELHI")** **AddNewRec("CHINA","BEIJING")** **ShowRec()** **# Statement-5** **(a) Name the module to be imported in Statement-1.** **(b) Write the file mode to be passed to add new record in Statement-2.** **(c) Fill in the blank in Statement-3 to close the file.** **(d) Fill in the blank in Statement-4 to read the data from a csv file.** **(e) Write the output which will come after executing Statement-5.**	**1** **1** **1** **1** **1**
	PART-B **Section-I** **Short answer questions of 2 marks each in which two question have internal options.**	
24.	**Write the output of the following python statements:** **(a) print(2 + 3*4//2 - 4)** **(b) print(10%3 – 10//3)**	**2**
25.	**Differentiate between SMTP & POP3.** **OR** **List any two security measures to ensure network security.**	**2**
26.	**Rohit has purchased a new Smart TV and wants to cast a video from his mobile to his new Smart TV. Identify the type of network he is using and explain it.**	**2**
27.	**What is the meaning of return value of a function? Give an example to illustrate its meaning.** **OR** **Differentiate between a positional and default arguments with the help of an example.**	**2**
28.	**Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.** **Y=integer(input("Enter 1 or 10"))** **if Y==10** **for Y in range(1,11):** **print(Y)** **else:** **for m in range(5,0,-1):** **print(thank you)**	**2**
29.	**What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables BEG and END.**	**2**

```
import random

HEIGHTS=[10,20,30,40,50]
BEG=random.randint(0,2)
END=random.randint(2,4)

for X in range(BEG,END):
    print(HEIGHTS[X],end="@")
```

(a) **30@**
(b) **10@20@30@40@50@**
(c) **20@30**
(d) **40@30@**

30. **What do you mean by domain of an attribute in DBMS? Explain with an example.** **2**

31. **Differentiate between fetchone() and fetchmany() methods with suitable examples.** **2**

32. **What is the difference between CHAR & VARCHAR data types in SQL? Give an example for each.** **2**

33. **Find and write the output of the following Python code:** **2**

```
def Convert(Old):
    l=len(Old)
    New=""
    for i in range(0,l):
        if Old[i].isupper():
            New=New+Old[i].lower()
        elif Old[i].islower():
            New=New+Old[i].upper()
        elif Old[i].isdigit():
            New=New+"*"
        else:
            New=New+"%"

    return New

Older="InDIa@2020"
Newer=Convert(Older)
print("New string is : ",Newer)
```

PART-B
Section-II

Short answer questions of 3 marks each in which two question have internal options.

34. **Write a function in python named SwapHalfList(Array), which accepts a list Array of numbers and swaps the elements of 1st Half of the list with the 2nd Half of the list ONLY if the sum of 1st Half is greater than 2nd Half of the list.** **3**

	Sample Input Data of the list **Array= [100, 200, 300, 40, 50, 60],** **Output Arr = [40, 50, 60, 100, 200, 300]**	
35.	**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' and starting with 'T' respectively. 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:** • **THIS IS IMPORTANT TO NOTE THAT SUCCESS IS THE RESULT OF HARD WORK.** • **WE ALL ARE EXPECTED TO DO HARD WORK.**	**3**
36.	**Write the Outputs of the SQL queries (i) to (iii) based on the given below tables:**	

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

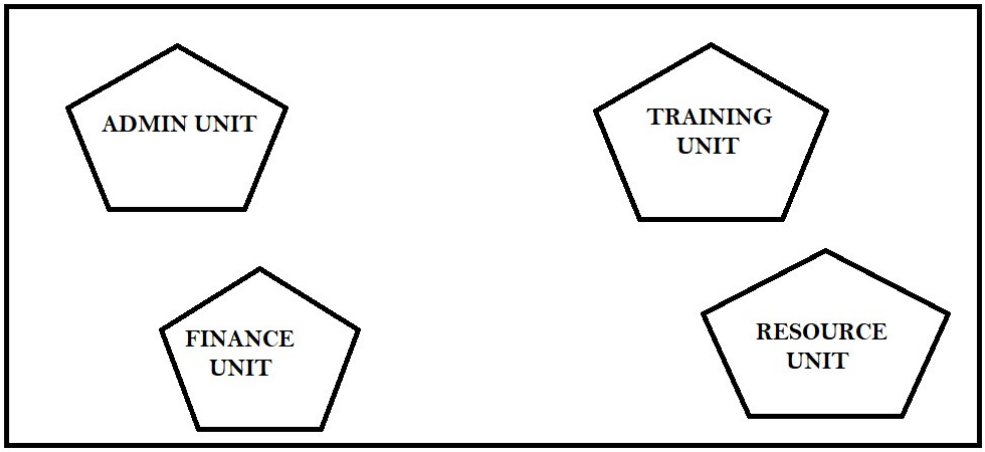
(i)	**SELECT DISTINCT(CITY) FROM TRAINER WHERE SALARY>80000;**	**1**
(ii)	**SELECT TID, COUNT(*), MAX(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1;**	**1**
(iii)	**SELECT T.TNAME, C.CNAME FROM TRAINER T, COURSE C WHERE T.TID=C.TID AND T.FEES<10000;**	**1**
37.	**Write a function in python named PUSH(STACK, SET) where STACK is list of some numbers forming a stack and SET is a list of some numbers. The function will push all the EVEN elements from the SET into a STACK implemented by using a list. Display the stack after push operation.** **OR** **Write a function in python named POP(STACK) where STACK is a stack implemented by a list of numbers. The function will display the popped element after function call.**	**3**

PART-B

Section-III

Short answer questions of 5 marks each in which ONE question have internal options.

38.	**"VidyaDaan" an NGO is planning to setup its new campus at Nagpur for its web-based activities. The campus has four(04) UNITS as shown below:**	**5**



➔ **Distances between above UNITs are given here s under:**

UNIT-1	UNIT-2	DISTANCE(In mtrs.)
ADMIN	TRAINING	65
ADMIN	RESOURCE	120
ADMIN	FINANCE	100
FINANCE	TRAINING	60
FINANCE	RESOURCE	40
TRAINING	RESOURCE	50

➔ **No. of Computers in various UNITs are:**

UNIT	NO. OF COMPUTERS
ADMIN	150
FINANCE	25
TRAINING	90
RESOURCE	75

(i)	Suggest an ideal cable layout for connecting the above UNITs.	
(ii)	Suggest the most suitable place i.e. UNIT to install the server for the above NGO.	
(iii)	Which network device is used to connect the computers in all UNITs?	
(iv)	Suggest the placement of Repeater in the UNITs of above network.	
(v)	NGO is planning to connect its Regional Office at Kota, Rajasthan. Which out of the following wired communication, will you suggest for a very high-speed connectivity? (a) Twisted Pair cable (b) Ethernet cable (c) Optical Fiber	
39.	Write SQL commands for the following queries (i) to (v) based on the relations TRAINER & COURSE given below:	5

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

(i) **Display all details of Trainers who are living in city CHENNAI.**

(ii) **Display the Trainer Name, City & Salary in descending order of their Hiredate.**

(iii) **Count & Display the number of Trainers in each city.**

(iv) **Display the Course details which have Fees more than 12000 and name ends with 'A'.**

(v) **Display the Trainer Name & Course Name from both tables where Course Fees is less than 10000.**

40. **A binary file named "EMP.dat" has some records of the structure** **5**

[EmpNo, EName, Post, Salary]

(a) Write a user-defined function named NewEmp() to input the details of a new employee from the user and store it in EMP.dat.

(b) Write a user-defined function named SumSalary(Post) that will accept an argument the post of employees & read the contents of EMP.dat and calculate the SUM of salary of all employees of that Post.

OR

A binary file named "TEST.dat" has some records of the structure

[TestId, Subject, MaxMarks, ScoredMarks]

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 & display the Average of the ScoredMarks of the passed Subject on screen.

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KENDRIYA VIDYALAYA SANGATHAN DELHI REGION

1ST PRE-BOARD EXAMINATION 2020-21

COMPUTER SCIENCE NEW (Code: 083)

CLASS: XII

SET-1

Time: 3 hrs. **M.M.: 70**

MARKING SCHEME

Instructions:

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

PART-A

Section-I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no. 1 to 21.

Q. No.	Option No.	Questions Description	Marks Allotted
1.		Identify the invalid keyword in Python from the following: (a) True (b) None (c) Import (d) return	1
		(c) Import	
2.		Write the output of the following python expression: `print((4>5) and (2!=1) or (4<9))`	1
		True	
3.		Write the importance of passing file mode while declaring a file object in data file handling.	1
		File mode is used to tell that file object will read or write or both data in a data file.	
4.		Find the operator which cannot be used with a string in Python from the following: (a) + (b) in (c) * (d) //	1

		(d)	
5.		**Write the output of the following python statements:** `Array=[8,5,3,2,1,1]` `print(Array[-1:-6:-1])`	**1**
		11235	
6.		**Consider the tuple in python named DAYS=("SUN","MON","TUES"). Identify the invalid statement(s) from the given below statements:** **1. S=DAYS[1]** **2. print(DAYS[2])** **3. DAYS[0]="WED"** **4. LIST=list(DAYS)**	**1**
		3. DAYS[0]="WED"	
7.		**Declare a dictionary in python named QUAD having Keys(1,2,3,4) and Values("India","USA","Japan","Australia")**	**1**
		QUAD={1:"India", 2:"USA", 3:"Japan", 4:"Australia"}	
8.		**_____ is a collection of similar modules or packages that are used to fulfills some functional requirement for a specific type of application.**	**1**
		Library	
9.		**Website incharge KABIR of a school is handling downloading/uploading various files on school website. Write the name of the protocol which is being used in the above activity.**	**1**
		File Transfer Protocol(FTP)	
10.		**What is its use of Data encryption in a network communication?**	**1**
		Data encryption is the process of converting a message into an unmeaningful form. It is used to ensure data security while communication.	
11.		**In SQL, write the name of the aggregate function which is used to calculate & display the average of numeric values in an attribute of a relation.**	**1**
		AVG()	
12.		**Write an SQL query to display all the attributes of a relation named "TEST" along with their description.**	**1**
		DESCRIBE TEST; or DESC TEST;	
13.		**What is the use of LIKE keyword in SQL?**	**1**
		LIKE keyword is used to find matching CHAR values with WHERE clause.	
14.		**Which of the following is NOT a DML command?** **1. SELECT 2. DELETE 3. UPDATE 4. DROP**	**1**
		4. DROP	
15.		**Give the full form of the following:** **(a) URL (b) TDMA**	**1**
		(a) URL – Uniform Resource Locator **(b) TDMA – Time Division Multiple Access**	
16.		**Identify the output of the following python statements if there is no error. Otherwise, identify the error(s):**	**1**

		`Str1="Computer2020"` `Str2=tuple(Str1[8:12])` `Str3=list(Str2)` `print(Str3,"#",len(Str3))`	
		['2', '0', '2', '0'] # 4	
17.		**List one common property of a String and a Tuple.**	**1**
		Both of them are immutable.	
18.		**What is the purpose of following SQL command:** **SHOW DATABASES;**	**1**
		This command will print name of all the databases present in RDBMS.	
19.		**Differentiate between Bps & bps.**	**1**
		Bps is Byte per second and bps is bits per second which tells the variation in data transmission speed.	
20.		**Identify the error in the following SQL query which is expected to delete all rows of a table TEMP without deleting its structure and write the correct one:** **DELETE TABLE TEMP;**	**1**
		DELETE FROM TEMP;	
21.		**Identify the Guided and Un-Guided Transmission Media out of the following:** **Satellite, Twisted Pair Cable, Optical Fiber, Infra-Red waves**	**1**
		Guided: Twisted Pair Cable, Optical Fiber **Unguided: Satellite, Infra-Red waves**	

PART-A
Section-II

Both the case study-based questions are compulsory. Attempt any 4 out of the 5 subparts from each question. Each question carries 1 mark.

22. **A CD/DVD Shop named "NEW DIGITAL SHOP" stores various CDs & DVDs of songs/albums/movies and use SQL to maintain its records. As a Database Administrator, you have decided the following:**

- **Name of Database - CDSHOP**
- **Name of Relation - LIBRARY**
- **Attributes are:-**
  - **(a) CDNO - Numeric values**
  - **(b) NAME - Character values of size (25)**
  - **(c) QTY - Numeric values**
  - **(d) PRICE - Decimal values**

Table: LIBRARY

CDNO	NAME	QTY	PRICE
10001	Indian Patriotic	20	150
10004	Hanuman Chalisa	15	80

		10005	Instrumental of Kishore	25	95
		10003	Songs of Diwali	18	125
		10006	Devotional Krishna Songs	14	75
		10002	Best Birthday Songs	17	NULL
	Answer the following questions based on the above table LIBRARY:-				
(a)	Write the Degree & Cardinality of the relation LIBRARY.				1
	4 & 6				
(b)	Identify the best attribute which may be declared as Primary key.				1
	CDNO				
(c)	Insert the following record in the above relation: (10009, "Motivational Songs", 15, 70)				1
	INSERT INTO LIBRARY VALUES (10009, "Motivational Songs", 15, 70);				
(d)	Write an SQL query to display the minimum quantity.				1
	SELECT MIN(QTY) FROM LIBRARY;				
(e)	Database administrator wants to count the no. of CDs which does not have any Price value. Write the query for the same.				1
	SELECT COUNT(*) FROM LIBRARY WHERE PRICE IS NULL;				
23.	Abhisar is making a software on "Countries & their Capitals" in which various records are to be stored/retrieved in CAPITAL.CSV data file. It consists some records(Country & Capital). He has written the following code in python. As a programmer, you have to help him to successfully execute the program.				

```
import _____                                    # Statement-1

def AddNewRec(Country,Capital):      # Fn. to add a new record in CSV file
    f=open("CAPITAL.CSV",_____)          # Statement-2
    fwriter=csv.writer(f)
    fwriter.writerow([Country,Capital])
    f._____                                     # Statement-3

def ShowRec():                              # Fn. to display all records from CSV file
    with open("CAPITAL.CSV","r") as NF:
        NewReader=csv._____(NF)      # Statement-4
        for rec in NewReader:
            print(rec[0],rec[1])

AddNewRec("INDIA","NEW DELHI")
AddNewRec("CHINA","BEIJING")
ShowRec()                                       # Statement-5
```

(a)	Name the module to be imported in Statement-1.	1
(b)	Write the file mode to be passed to add new record in Statement-2.	1
(c)	Fill in the blank in Statement-3 to close the file.	1
(d)	Fill in the blank in Statement-4 to read the data from a csv file.	1
(e)	Write the output which will come after executing Statement-5.	1

	(a) csv (b) "a" (c) close() (d) reader (e) INDIA NEW DELHI CHINA BEIJING	
	PART-B **Section-I** **Short answer questions of 2 marks each in which two question have internal options.**	
24.	Write the output of the following python statements: (a) print(2 + 3*4//2 - 4) (b) print(10%3 – 10//3)	2
	(a) 4 (b) -2 1 mark for each correct answer.	
25.	Differentiate between SMTP & POP3. **OR** List any two security measures to ensure network security.	2
	SMTP: It is used to send emails. POP3: It is used to receive emails. 1 mark for each correct difference. **OR** 1. Firewall 2. User Authentication .5 mark for any 2 correct answers.	
26.	Rohit has purchased a new Smart TV and wants to cast a video from his mobile to his new Smart TV. Identify the type of network he is using and explain it.	2
	Rohit is using PAN-Personal Area Network. It is a private network which is set-up by an individual to transfer data among his personal devices of home. .5 mark each for correct answer & its definition.	
27.	What is the meaning of return value of a function? Give an example to illustrate its meaning. **OR** Differentiate between a positional and default arguments with the help of an example.	2
	Return value of a function is the value which is being given back to the main program after the execution of function. E.g. def Check(): return 100	

	OR **Positional arguments are those which are used & passed in a particular sequence always.** **Default arguments are those whose default value is used by the function in the absence of actual argument values at the time of functional call.** **1 mark for each correct definition & example.**	
28.	**Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.** **Y=integer(input("Enter 1 or 10"))** **if Y==10** **for Y in range(1,11):** **print(Y)** **else:** **for m in range(5,0,-1):** **print(thank you)**	**2**
	Y=int(input("Enter 1 or 10")) **if Y==10** **for Y in range(1,11):** **print(Y)** **else:** **for m in range(5,0,-1):** **print("thank you")** **.5 mark for each correct error.**	
29.	**What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables BEG and END.** `import random` `HEIGHTS=[10,20,30,40,50]` `BEG=random.randint(0,2)` `END=random.randint(2,4)` `for X in range(BEG,END):` `print(HEIGHTS[X],end="@")` (a) **30@** (b) **10@20@30@40@50@** (c) **20@30** (d) **40@30@**	**2**
	(a) & (b) **Maximum value of BEG: 2** **Maximum value of END: 4**	

	.5 mark for each correct answer upto max. 2 marks.	
30.	**What do you mean by domain of an attribute in DBMS? Explain with an example.**	**2**
	Domain of an attribute is the set of values from which a value may come in a column. E.g. Domain of section field may be (A,B,C,D). **1 mark for each correct answer.**	
31.	**Differentiate between fetchone() and fetchmany() methods with suitable examples.**	**2**
	fetchone() is used to retrieve one record at a time but fetchmany(n) will fetch n records at a time from the table in the form of a tuple. **1 mark for each correct answer.**	
32.	**What is the difference between CHAR & VARCHAR data types in SQL? Give an example for each.**	**2**
	CHAR is used to occupy fixed memory irrespective of the actual values but VARCHAR uses only that much memory which is used actually for the entered values. **E.g. CHAR(10) will occupy always 10 bytes in memory no matter how many characters are used in values. But VARCHAR will uses only that much bytes of memory whose values are passed.** **1 mark for each correct answer.**	
33.	**Find and write the output of the following Python code:** `def Convert(Old):` `  l=len(Old)` `  New=""` `  for i in range(0,l):` `  if Old[i].isupper():` `  New=New+Old[i].lower()` `  elif Old[i].islower():` `  New=New+Old[i].upper()` `  elif Old[i].isdigit():` `  New=New+"*"` `  else:` `  New=New+"%"` `  return New` `Older="InDIa@2020"` `Newer=Convert(Older)` `print("New string is : ",Newer)`	**2**
Output: **New string is : iNdiA%******		

2 marks for correct answer. 1 mark for partial correct output.

PART-B
Section-II

Short answer questions of 3 marks each in which two question have internal options.

34. **Write a function in python named SwapHalfList(Array), which accepts a list Array of numbers and swaps the elements of 1st Half of the list with the 2nd Half of the list ONLY if the sum of 1st Half is greater than 2nd Half of the list.** **3**

Sample Input Data of the list
Array= [100, 200, 300, 40, 50, 60],
Output Array = [40, 50, 60, 100, 200, 300]

```
def SwapHalfList(Array):
    s1=s2=0
    l=len(Array)
    for i in range(0,l//2):
        s1+=Array[i]

    for i in range(l//2, l):
        s2+=Array[i]

    if s1>s2:
        for i in range(0,l//2):
            Array[i],Array[i+l//2]=Array[i+l//2],Array[i]


L=[6,5,4,1,2,3]
SwapHalfList(L)
print(L)
```

.5 mark for correct declaration of function header
.5 mark each for correct sum calculation of each half
1.5 marks for any correct swapping

35. **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' and starting with 'T' respectively. And display the Total count separately.** **3**

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:** • **THIS IS IMPORTANT TO NOTE THAT SUCCESS IS THE RESULT OF HARD WORK.** • **WE ALL ARE EXPECTED TO DO HARD WORK.**	
	`` def COUNTLINES_ET(): f=open("REPORT.TXT","r") lines=f.readlines() LineE=0 LineT=0 for i in lines: if i[0]=='E': LineE+=1 elif i[0]=='T': LineT+=1 print("No. of Lines with E:",LineE) print("No. of Lines with T:",LineT) COUNTLINES_ET() ``` **.5 mark for correct function header.** **.5 mark for correct opening of file.** **1.5 mark for any correct logic & it's code.** **.5 mark for printing correct output.** **OR** ``` def SHOW_TODO(): f=open("ABC.TXT","r") lines=f.readlines() for i in lines: if "TO" in i or "DO" in i: print(i) SHOW_TODO() ```	

	.5 mark for correct function header. **.5 mark for correct opening of file.** **1.5 mark for any correct logic & it's code.** **.5 mark for printing correct output.**	
36.	**Write the Outputs of the SQL queries (i) to (iii) based on the given below tables:**	

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

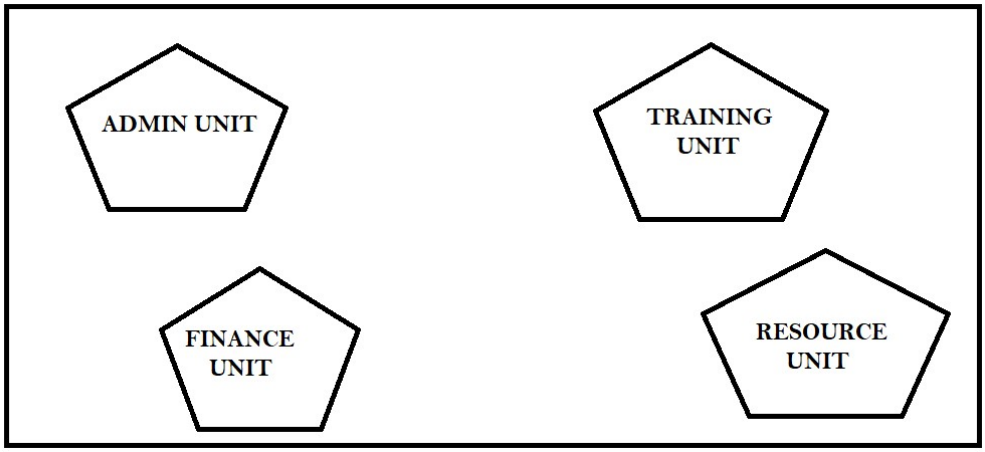
(i)	**SELECT DISTINCT(CITY) FROM TRAINER WHERE SALARY>80000;**	**1**
	MUMBAI **DELHI** **CHANDIGARH** **CHENNAI**	
(ii)	**SELECT TID, COUNT(*), MAX(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1;**	**1**
	TID COUNT(*) MAX(FEES) **101 2 20000**	
(iii)	**SELECT T.TNAME, C.CNAME FROM TRAINER T, COURSE C WHERE T.TID=C.TID AND T.FEES<10000;**	**1**
	T.TNAME C.CNAME **MEENAKSHI DDTP**	
37.	**Write a function in python named PUSH(STACK, SET) where STACK is list of some numbers forming a stack and SET is a list of some numbers. The function will push all the EVEN elements from the SET into a STACK implemented by using a list. Display the stack after push operation.** **OR** **Write a function in python named POP(STACK) where STACK is a stack implemented by a list of numbers. The function will display the popped element**	**3**

	after function call.	
	`` def PUSH(STACK,SET): for i in SET: if i%2==0: STACK.append(i) print("Updated stack is :",STACK) ``` **OR** ``` def POP(STACK): if STACK==[]: print("Stack is empty") else: print(STACK.pop()) ```	

PART-B
Section-III

Short answer questions of 5 marks each in which ONE question have internal options.

38. **"VidyaDaan" an NGO is planning to setup its new campus at Nagpur for its web-based activities. The campus has four(04) UNITS as shown below:** **5**



➔ **Distances between above UNITs are given here s under:**

UNIT-1	UNIT-2	DISTANCE(In mtrs.)
ADMIN	TRAINING	65
ADMIN	RESOURCE	120
ADMIN	FINANCE	100
FINANCE	TRAINING	60
FINANCE	RESOURCE	40
TRAINING	RESOURCE	50

➔ **No. of Computers in various UNITs are:**

UNIT	NO. OF COMPUTERS
ADMIN	150

		FINANCE	**25**	
		TRAINING	**90**	
		RESOURCE	**75**	
(i)	**Suggest an ideal cable layout for connecting the above UNITs.**			
	Bus/Star topology			
(ii)	**Suggest the most suitable place i.e. UNIT to install the server for the above NGO.**			
	ADMIN			
(iii)	**Which network device is used to connect the computers in all UNITs?**			
	1. ADMIN & RESOURCE **2. ADMIN & FINANCE**			
(iv)	**Suggest the placement of Repeater in the UNITs of above network.**			
	All UNITs			
(v)	**NGO is planning to connect its Regional Office at Kota, Rajasthan. Which out of the following wired communication, will you suggest for a very high-speed connectivity?** **(a) Twisted Pair cable (b) Ethernet cable (c) Optical Fiber**			
	(c) Optical Fiber			
39.	**Write SQL commands for the following queries (i) to (v) based on the relations TRAINER & COURSE given below:**			**5**

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

(i)	**Display all details of Trainers who are living in city CHENNAI.**	
	SELECT * FROM TRAINER WHERE CITY IS "CHENNAI";	
(ii)	**Display the Trainer Name, City & Salary in descending order of their Hiredate.**	
	SELECT TNAME, CITY, SALARY FROM TRAINER ORDER BY HIREDATE DESC;	
(iii)	**Count & Display the number of Trainers in each city.**	
	SELECT CITY, COUNT(*) FROM TRAINER GROUP BY CITY;	
(iv)	**Display the Course details which have Fees more than 12000 and name ends with 'A'.**	
	SELECT * FROM COURSE WHERE FEES>12000 AND CNAME LIKE '%A';	
(v)	**Display the Trainer Name & Course Name from both tables where Course Fees is less than 10000.**	
	SELECT T.TNAME, C.CNAME FROM TRAINER T, COURSE C WHERE T.TID=C.CID AND C.FEES<10000;	
40.	**A binary file named "EMP.dat" has some records of the structure** **[EmpNo, EName, Post, Salary]** **(a) Write a user-defined function named NewEmp() to input the details of a new employee from the user and store it in EMP.dat.** **(b) Write a user-defined function named SumSalary(Post) that will accept an argument the post of employees & read the contents of EMP.dat and calculate the SUM of salary of all employees of that Post.** **OR** **A binary file named "TEST.dat" has some records of the structure** **[TestId, Subject, MaxMarks, ScoredMarks]** **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 & display the Average of the ScoredMarks of the passed Subject on screen.**	**5**

```
import pickle

def NewEmp():
    print("Enter the details of an employee:")
    no=int(input("Enter the Empno"))
    name=input("Enter the name")
    post=input("Enter the post")
    sal=float(input("Enter the salary"))

    erec=[no,name,post,sal]
    f=open("EMP.dat","ab")
    pickle.dump(erec,f)
    print("New record saved")
    f.close()

def SumSalary(Post):
    f=open("EMP.dat","rb")
    count=0
    sum=0

    try:
        while True:
            rec=pickle.load(f)
            if rec[3]==Post:
                sum+=rec[4]
    except EOFError:
        f.close()

    print("Sum of Salary :",sum)
```

OR

```
def DisplayAvgMarks(Sub):
    f=open("ABC.dat","rb+")
    count=0
    sum=0

    try:
        while True:
            pos=f.tell()
            rec=pickle.load(f)
            print(rec)
            if rec[1]==Sub:
                sum+=rec[3]
                count+=1
    except EOFError:
        f.close()

    print("Average marks scored :",sum/count)
```

****

KVS – GURUGRAM REGION

Class: XII - Computer Science (083) Session: 2020-21

Pre-Board Question Paper (Theory)

Maximum Marks: 70 **Time Allowed: 3 hours**

General Instructions:

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

	Part A	
	Section I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	
1	Find the valid identifier from the following a) My-Name b) True c) 2ndName d) S_name	1
2	Given the lists L=[1,3,6,82,5,7,11,92] , What will be the output of print(L[2:5])	1
3	Write the full form of IDLE.	1
4	Identify the valid logical operator in Python from the following. a) ? b) < c) ** d) and	1
5	Suppose a tuple Tup is declared as Tup = (12, 15, 63, 80), which of the following is incorrect? a) print(Tup[1]) b) Tup[2] = 90 c) print(min(Tup)) d) print(len(Tup))	1
6	Write a statement in Python to declare a dictionary whose keys are 1,2,3 and values are Apple, Mango and Banana respectively.	1
7	A tuple is declared as T = (2,5,6,9,8)	1

	What will be the value of sum(T)?	
8	Name the built-in mathematical function / method that is used to return square root of a number.	1
9	Protocol is used to send email ……	1
10	Your friend Sunita complaints that somebody has created a fake profile on Twitter and defaming her character with abusive comments and pictures. Identify the type of cybercrime for these situations.	1
11	In SQL, name the command/clause that is used to display the rows in descending order of a column.	1
12	In SQL, what is the error in following query : SELECT NAME, SAL, DESIGNATION WHERE DISCOUNT=NULL;	1
13	Write any two aggregate functions used in SQL.	1
14	Which of the following is a DML command? a) SELECT b) Update c) INSERT d) All	1
15	Name the transmission media best suitable for connecting to desert areas.	1
16	Identify the valid declaration of P: P= ['Jan', 31, 'Feb', 28] a. dictionary b. string c.tuple d. list	1
17	If the following code is executed, what will be the output of the following code? str="KendriyaVidyalayaSangathan" print(str[8:16])	1
18	In SQL, write the query to display the list of databases.	1
19	Write the expanded form of VPN.	1
20	Which of the following will suppress the entry of duplicate value in a column? a) Unique b) Distinct c) Primary Key d) NOT NULL	1
21	Rearrange the following terms in increasing order of speedy medium of data transfer. Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	1
	Part A	
	Section II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
22	Modern Public School is maintaining fees records of students. The database administrator Aman decided that- • Name of the database -School • Name of the table – Fees • The attributes of Fees are as follows: Rollno - numeric Name – character of size 20 Class - character of size 20 Fees – Numeric Qtr – Numeric Answer any four from the following questions: (i) Identify the attribute best suitable to be declared as a primary key (ii) Write the degree of the table. (iii) Insert the following data into the attributes Rollno, Name, Class, Fees and Qtr in fees table. (iv) Aman want to remove the table Fees table from the database School. Which command will he use from the following: a) DELETE FROM Fees; b) DROP TABLE Fees; c) DROP DATABASE Fees; d) DELETE Fees FROM Fees; (v) Now Aman wants to display the structure of the table Fees, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same.	1x4 =4
23	Anis of class 12 is writing a program to create a CSV file "mydata.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.	1x4 =4

	import _____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file f=open(' mydata.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('mydata.csv','r') as newFile: newFileReader = csv._____(newFile) # Line 3 for row in newFileReader: print (row[0],row[1]) newFile._____ # Line 4 addCsvFile("Aman","123@456") addCsvFile("Anis","aru@nima") addCsvFile("Raju","myname@FRD") readCsvFile() #Line 5 (a) Give Name of the module he should import in Line 1. (b) In which mode, Aman should open the file to add data into the file (c) Fill in the blank in Line 3 to read the data from a csv file. (d) Fill in the blank in Line 4 to close the file. (e) Write the output he will obtain while executing Line 5.	
	Part B (Section I)	
24	Evaluate the following expressions: a) 8 * 3 + 2**3 // 9 – 4 b) 12 > 15 and 8 > 12 or not 19 > 4	2
25	Differentiate between Viruses and Trojans in context of networking and data communication threats. **OR** Differentiate between Website and webpage. Write any two popular example of online shopping.	2
26	Expand the following terms: a. HTTP b. FLOSS c. PAN d. IRC	2
27	Differentiate between call by value and call by reference with a suitable example for each. **OR** Explain the use of return key word used in a function with the help of a suitable example.	2
28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. p=30 for c in range(0,p) If c%4==0: print (c*4) Elseif c%5==0: print (c+3) else print(c+10)	2
29	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables Lower and Upper. import random AR=[20,30,40,50,60,70];	2

	Lower =random.randint(1,4) Upper =random.randint(2,5) for K in range(Lower, Upper +1): print (AR[K],end="#") (i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#	
30	What do you understand by Foreign Key in a table? Give a suitable example of Foreign Key from a table containing some meaningful data.	2
31	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	2
32	Categorize the following as DML and DDL Commands: SELECT, INSERT, CREATE, UPDATE, ALTER, DELETE, DROP	2
33	Find and write the output of the following Python code: def Show(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) Show('HappyBirthday')	2
	Part B(Section II)	
34	Write a function LMove(Lst,n) in Python, which accepts a list Lst of numbers and n is a numeric value by which all elements of the list are shifted to left. Sample Input Data of the list Lst= [10,20,30,40,12,11], n=2 Output Lst = [30,40,12,11,10,20]	3
35	Write a function in Python that counts the number of "Me" or "My" words present in a text file "STORY.TXT". If the "STORY.TXT" contents are as follows: My first book was Me and My Family. It gave me chance to be Known to the world. The output of the function should be: Count of Me/My in file: 4 **OR** Write a function AMCount() in Python, which should read each character of a text file STORY.TXT, should count and display the occurrences of alphabets A and M (including small cases a and m too). Example: If the file content is as follows: Updated information As simplified by official websites. The AMCount() function should display the output as: A or a: 4 M or m :2	3
36	Consider the table TEACHER given below. Write commands in SQL for (i) to (iii)	3

TEACHER

ID	Name	Department	Hiredate	Category	Gender	Salary
1	Taniya	SocialStudies	03/17/1994	TGT	F	25000
2	Abhishek	Art	02/12/1990	PRT	M	20000

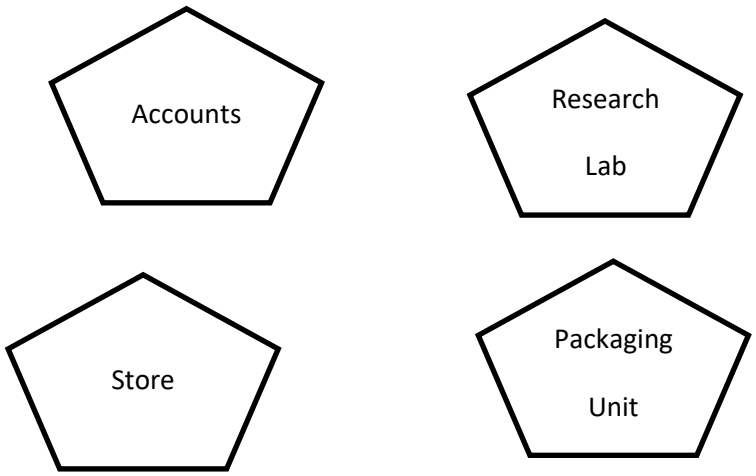
	3	Sanjana	English	05/16/1980	PGT	F	30000
	4	Vishwajeet	English	10/16/1989	TGT	M	25000
	5	Aman	Hindi	08/1/1990	PRT	F	22000
	6	Pritam	Math	03/17/1980	PRT	F	21000
	7	RajKumar	Science	09/2/1994	TGT	M	27000
	8	Sital	Math	11/17/1980	TGT	F	24500

i. To display all information about teachers of Female PGT Teachers.

ii. To list names, departments and date of hiring of all the teachers in descending order of date of joining.

iii. To count the number of teachers and sum of their salary department wise.

37	Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. **OR** Write a function in Python POP(Arr), where Arr is a stack implemented by a list of numbers. The function returns the value deleted from the stack.	3
	Part B Section III	
38	Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below:	5



Distance between various building are as follows:

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

Number of Computers

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:
i) Suggest a cable layout of connections between the buildings.
ii) Suggest the most suitable place (i.e. buildings) to house the server of this organization.
iii) Suggest the placement of the following device with justification:
a) Repeater b) Hub/Switch
iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.
v) Which cable is best suited for above layout.

39 Write SQL commands for the queries (i) to (iii) and output for (iv) & (v) based on a table COMPANY and CUSTOMER . 5

COMPANY

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

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	Rohan Sharma	70000	20	222
102	Deepak Kumar	50000	10	666
103	Mohan Kumar	30000	5	111
104	SahilBansal	35000	3	333
105	NehaSoni	25000	7	444
106	SonalAggarwal	20000	5	333
107	Arjun Singh	50000	15	666

(i) To display those company name which are having price less than 30000.
(ii) To display the name of the companies in reverse alphabetical order.
(iii) To increase the price by 1000 for those customer whose name starts with 'S'
(iv) SELECT PRODUCTNAME,CITY, PRICE FROM COMPANY,CUSTOMER
WHERE COMPANY.CID=CUSTOMER.CID AND PRODUCTNAME="MOBILE";
(v) SELECT AVG(QTY) FROM CUSTOMER WHERE NAME LIKE "%r%;

40 A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. 5
i. Write a user defined function CreateFile() to input data for a record and add to "Book.dat" .
ii. Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"

OR

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

MARKING SCHEME

KVS – GURUGRAM REGION
Class: XII - Computer Science (083) Session: 2020-21

Pre-Board Question Paper (Theory)

ime : 3 Hrs MM:70

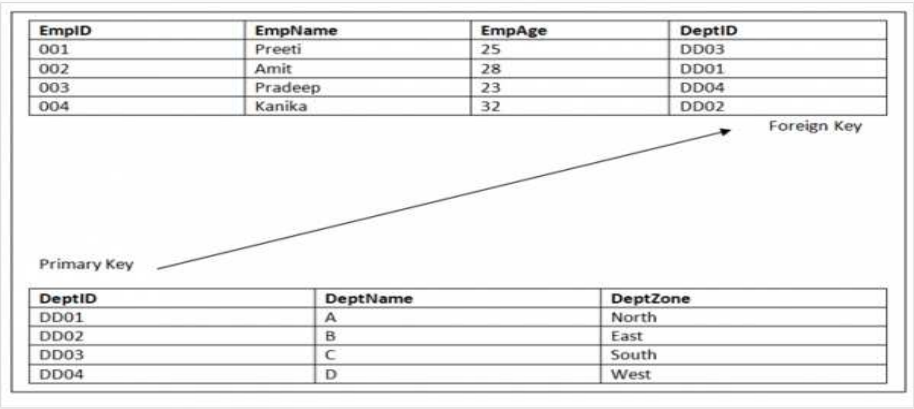
	Part A Section I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	
1	Find the valid identifier from the following a) My-Name b) True c) 2ndName d) S_name	1
Ans	s) S_name	
2	Given the lists L=[1,3,6,82,5,7,11,92] , What will be the output of print(L[2:5])	1
Ans	[6,82,5]	
3	Write the full form of IDLE.	1
Ans	Integrated Development Learning Environment	
4	Identify the valid logical operator in Python from the following. a) ? b) < c) ** d) and	1
Ans	d) and	
5	Suppose a tuple Tup is declared as Tup = (12, 15, 63, 80), which of the following is incorrect? a) print(Tup[1]) b) Tup[2] = 90 c) print(min(Tup)) d) print(len(Tup))	1
Ans	b) Tup[2]=90	
6	Write a statement in Python to declare a dictionary whose keys are 1,2,3 and values are Apple, Mango and Banana respectively.	1
Ans	Dict={1:'Apple', 2: 'Mango',3 : 'Banana'}	
7	A tuple is declared as T = (2,5,6,9,8) What will be the value of sum(T)?	1
Ans	30	
8	Name the built-in mathematical function / method that is used to return square root of a number.	1
Ans	sqrt()	
9	Protocol is used to send email ……	1
Ans	SMTP	
10	Your friend Sunita complaints that somebody has created a fake profile on Twitter and defaming her character with abusive comments and pictures. Identify the type of cybercrime for these situations.	1
Ans	Identity Theft	
11	In SQL, name the command/clause that is used to display the rows in descending order of a column.	1
Ans	Order By …… Desc	
12	In SQL, what is the error in following query : SELECT NAME,SAL,DESIGNATION WHERE DISCOUNT=NULL;	1
Ans	SELECT NAME,SAL,DESIGNATION WHERE DISCOUNT IS NULL;	

13	Write any two aggregate functions used in SQL.	1
Ans	max(),min(),avg(),count()	
14	Which of the following is a DML command? a) SELECT b) Update c) INSERT d) All of these	1
Ans	d) All of these	
15	Name the transmission media best suitable for connecting to desert areas.	1
Ans	Microwave	
16	Identify the valid declaration of P: P= ['Jan', 31, 'Feb', 28] a. dictionary b. string c.tuple d. list	1
Ans	d) list	
17	If the following code is executed, what will be the output of the following code? str="KendriyaVidyalayaSangathan" print(str[8:16])	1
Ans	Vidyalay	
18	In SQL, write the query to display the list of databases.	1
Ans	SHOW DATABASES;	
19	Write the expanded form of VPN.	1
Ans	Virtual Private Network	
20	Which of the following will suppress the entry of duplicate value in a column? a) Unique b) Distinct c) Primary Key d) NOT NULL	1
Ans	b) Distinct	
21	Rearrange the following terms in increasing order of speedy medium of data transfer. Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	1
Ans	Telephone line, Twisted Pair Cable, Coaxial Cable, Fiber Optics	
	Part A Section II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
22	Modern Public School is maintaining fees records of students. The database administrator Aman decided that- ● Name of the database -School ● Name of the table – Fees ● The attributes of Fees are as follows: Rollno - numeric Name – character of size 20 Class - character of size 20 Fees – Numeric Qtr – Numeric Answer any four from the following questions: (i) Identify the attribute best suitable to be declared as a primary key (ii) Write the degree of the table. (iii) Insert the following data into the attributes Rollno, Name, Class, Fees and Qtr in fees table. (iv) Aman want to remove the table Fees table from the database School. Which command will he use from the following: a) DELETE FROM Fees; b) DROP TABLE Fees;	1x4 =4

	c)DROP DATABASE Fees; d) DELETE Fees FROM Fees; (v) Now Aman wants to display the structure of the table Fees, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same.	
Ans	i)Primary Key – Rollno ii)Degree of table= 5 iii)Insert into fees values(101,'Aman','XII',5000); iv)DELETE FROM Fees v)Describe Fees	
23	Anis of class 12 is writing a program to create a CSV file "mydata.csv" which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task. import _____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file f=open(' mydata.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('mydata.csv','r') as newFile: newFileReader = csv._____(newFile) # Line 3 for row in newFileReader: print (row[0],row[1]) newFile._____ # Line 4 addCsvFile("Aman","123@456") addCsvFile("Anis","aru@nima") addCsvFile("Raju","myname@FRD") readCsvFile() #Line 5 (a) Give Name of the module he should import in Line 1. (b) In which mode, Aman should open the file to add data into the file (c) Fill in the blank in Line 3 to read the data from a csv file. (d) Fill in the blank in Line 4 to close the file. (e) Write the output he will obtain while executing Line 5.	1x4 =4
Ans	(a) Line 1 : csv (b) Line 2 : a (c) Line 3 : reader (d) Line 4 : close() (e) Line 5 : Aman 123@456 Anis aru@nima Raju myname@FRD	
	Part B Section I	
24	Evaluate the following expressions: a) 8 * 3 + 2**3 // 9 – 4	2

	b) 12 > 15 and 8 > 12 or not 19 > 4	
Ans	a) 25 b) False	
25	Differentiate between Viruses and Trojans in context of networking and data communication threats. OR Differentiate between Website and webpage. Write any two popular example of online shopping.	2
Ans	Virus: Virus is a computer program or software that connect itself to another software or computer program to harm computer system. When the computer program runs attached with virus it perform some action such as deleting a file from the computer system. Virus can't be controlled by remote. Trojan Horse: Trojan Horse does not replicate itself like virus and worms. It is a hidden piece of code which steal the important information of user. For example, Trojan horse software observe the e-mail ID and password while entering in web browser for logging. OR Web Page is a document or a page where there is information. We can see those pages in the browser. Web Page is a single page with information. It can be in any form like texts, images or videos. Whereas the Website is a collection of webpages. The website has its own domain name which is unique throughout the world. Anything can be stored on a website like photos, videos, texts etc . Popular example of online shopping : Amazon,Flipcart etc	
26	Expand the following terms: a. HTTP b. FLOSS c. PAN d. IRC	2
Ans	HTTP – Hyper Text Transfer Protocol FLOSS- Free Libre Open Source Software PAN- Personal Area Network IRC- Internet Relay Chat	
27	Differentiate between call by value and call by reference with a suitable example for each. OR Explain the use of return key word used in a function with the help of a suitable example.	2
Ans	In the event that you pass arguments like whole numbers, strings or tuples to a function, the passing is like call-by-value because you can not change the value of the immutable objects being passed to the function. Whereas passing mutable objects can be considered as call by reference because when their values are changed inside the function, then it will also be reflected outside the function. OR The return statement is used to return a value of function to its calling program. Example: def mysum(a,b): return a+b print(mysum(10,20)) Output: 30	

28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. p=30 for c in range(0,p) If c%4==0: print (c*4) Elseif c%5==0: print (c+3) else print(c+10)	2
Ans	p=30 for c in range(0,p)**:** **if** c%4==0: print (c*4) **elif** c%5==0: print (c+3) **else:** print(c+10)	
29	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables Lower and Upper. import random AR=[20,30,40,50,60,70]; Lower =random.randint(1,4) Upper =random.randint(2,5) for K in range(Lower, Upper +1): print (AR[K],end="#") (i) 40# (ii) 40#50#60# (iii) 50# (iv) All	2
Ans	All of these	
30	What do you understand by Foreign Key in a table? Give a suitable example of Foreign Key from a table containing some meaningful data.	2
Ans	A Foreign Key creates a link between tables. It references the primary key in another table and links it. For example, the DeptID in the Employee table is a foreign key –	

	 **EmpID** / **EmpName** / **EmpAge** / **DeptID** 001 / Preeti / 25 / DD03 002 / Amit / 28 / DD01 003 / Pradeep / 23 / DD04 004 / Kanika / 32 / DD02 **DeptID** / **DeptName** / **DeptZone** DD01 / A / North DD02 / B / East DD03 / C / South DD04 / D / West	
31	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	2
Ans	fetchall() fetches all the rows of a query result. An empty list is returned if there is no record to fetch the cursor. fetchone() method returns one row or a single record at a time. It will return None if no more rows / records are available. Any example.	
32	Categorize the following as DML and DDL Commands: SELECT, INSERT, CREATE, UPDATE, ALTER, DELETE, DROP	2
Ans	DDL – Create, Alter, Drop DML- Select, Insert, Update, Delete	
33	Find and write the output of the following Python code: def Show(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) Show('HappyBirthday')	2
Ans	hAPPYbIRTHDAY	
	Part B (Section II)	
34	Write a function LMove(Lst,n) in Python, which accepts a list Lst of numbers and n is a numeric value by which all elements of the list are shifted to left. Sample Input Data of the list Lst= [10,20,30,40,12,11], n=2 Output Lst = [30,40,12,11,10,20]	3
Ans	def LMove(Lst,n): L=len(Lst) for x in range(0,n): y=Lst[0] for i in range(0,L-1):	

	Lst[i]=Lst[i+1] Lst[L-1]=y print(Lst) #Note : Using of any correct code giving the same result is also accepted.	
35	Write a function in Python that counts the number of “Me” or “My” words present in a text file “STORY.TXT”. If the “STORY.TXT” contents are as follows: My first book was Me and My Family. It gave me chance to be Known to the world. The output of the function should be: Count of Me/My in file: 4 OR Write a function AMCount() in Python, which should read each character of a text file STORY.TXT, should count and display the occurrences of alphabets A and M (including small cases a and m too). Example: If the file content is as follows: Updated information As simplified by official websites. The AMCount() function should display the output as: A or a: 4 M or m :2	3
Ans	def displayMeMy(): num=0 f=open("story.txt","rt") N=f.read() M=N.split() for x in M: if x=="Me" or x== "My": print(x) num=num+1 f.close() print("Count of Me/My in file:",num) OR def AMCount(): f=open("story.txt","r") A,M=0,0 r=f.read() for x in r: if x[0]=="A" or x[0]=="a" : A=A+1 elif x[0]=="M" or x[0]=="m": M=M+1 f.close() print("A or a: ",A)	

print("M or m: ",M)

36 Consider the table TEACHER given below. Write commands in SQL for (i) to (iii) — 3

TEACHER

ID	Name	Department	Hiredate	Category	Gender	Salary
1	Taniya	SocialStudies	03/17/1994	TGT	F	25000
2	Abhishek	Art	02/12/1990	PRT	M	20000
3	Sanjana	English	05/16/1980	PGT	F	30000
4	Vishwajeet	English	10/16/1989	TGT	M	25000
5	Aman	Hindi	08/1/1990	PRT	F	22000
6	Pritam	Math	03/17/1980	PRT	F	21000
7	RajKumar	Science	09/2/1994	TGT	M	27000
8	Sital	Math	11/17/1980	TGT	F	24500

i. To display all information about teachers of Female PGT Teachers.

ii. To list names, departments and date of hiring of all the teachers in descending order of date of joining.

iii. To count the number of teachers and sum of their salary department wise.

Ans

i) SELECT * FROM TEACHER WHERE CATEGORY= 'PGT' AND GENDER= 'F';
ii) SELECT NAME, DEPARTMENT, HIREDATE FROM TEACHER ORDER BY HIREDATE DESC;
iii) SELECT DEPARTMENT, COUNT(NAME), SUM(SALARY) FROM TEACHER GROUP BY DEPARTMENT;

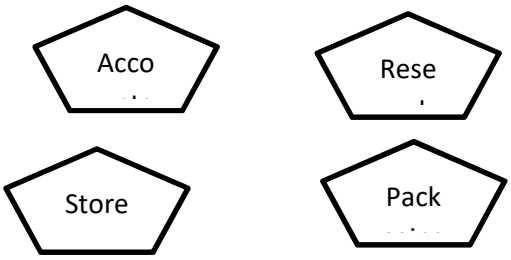
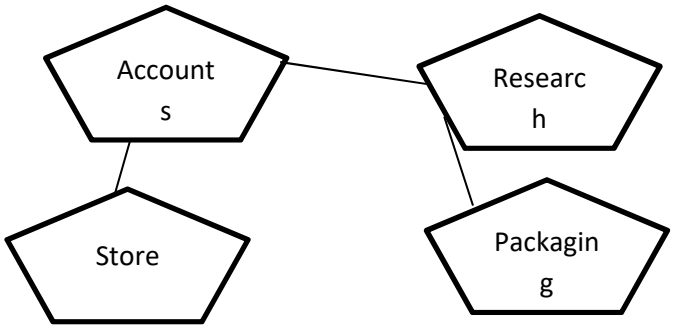
37 Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. OR Write a function in Python POP(Arr), where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

Ans

```
def PUSH(Arr,value):
 s=[]
 for x in range(0,len(Arr)):
 if Arr[x]%5==0:
 s.append(Arr[x])
 if len(s)==0:
print("Empty Stack")
else:
print(s)
```

OR

```
def popStack(st) : # If stack is empty
if len(st)==0:
print("Underflow")
 else:
 L = len(st)
val=st[L-1]
print(val)
st.pop(L-1)
```

	Part B Section III	
38	Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below:  Distance between various building are as follows: Accounts to research Lab — 55m Accounts to store — 150m Store to packaging unit — 160m Packaging unit to research lab — 60m Accounts to packaging unit — 125m Store to research lab — 180m Number of Computers Accounts — 25 Research Lab — 100 Store — 15 Packaging Unit — 60 As a network expert, provide the best possible answer for the following queries: i) Suggest a cable layout of connections between the buildings. ii) Suggest the most suitable place (i.e. buildings) to house the server of this organization. iii) Suggest the placement of the following device with justification: a) Repeater b) Hub/Switch iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network. v) Which cable is best suited for above layout.	5
Ans	i) Layout-  	

ii)The most suitable place/ building to house the server of this organization would be building Research Lab, as this building contains the maximum number of computers.
(iii)
a) For layout1, since the cabling distance between Accounts to Store is quite large, so a repeater would ideally be needed along their path to avoid loss of signals during the course of data flow in this route. For layout2, since the cabling distance between Store to Research Lab is quite large, so a repeater would ideally be placed.
b) In both the layouts, a Hub/Switch each would be needed in all the buildings to interconnect the group of cables from the different computers in each building.
(iv) Firewall
(v) Twisted Pair cable / Ethernet cable

39 Write SQL commands for the queries (i) to (iii) and output for (iv) & (v) based on a table COMPANY and CUSTOMER . 5

COMPANY

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

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	Rohan Sharma	70000	20	222
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103	Mohan Kumar	30000	5	111
104	Sahil Bansal	35000	3	333
105	Neha Soni	25000	7	444
106	Sonal Aggarwal	20000	5	333
107	Arjun Singh	50000	15	666

(i) To display those company name which are having price less than 30000.
(ii) To display the name of the companies in reverse alphabetical order.
(iii) To increase the price by 1000 for those customer whose name starts with 'S'
(iv) SELECT PRODUCTNAME,CITY, PRICE FROM COMPANY,CUSTOMER
WHERE COMPANY.CID=CUSTOMER.CID AND PRODUCTNAME="MOBILE";
(v) SELECT AVG(QTY) FROM CUSTOMER WHERE NAME LIKE "%r%;

Ans
i) SELECT COMPANY.NAME FROM COMPANY,CUSTOMER
WHERECOMPANY.CID = CUSTOMER.CID AND CUSTOMER.PRICE <30000;
ii) SELECT NAME FROM COMPANY ORDER BY NAME DESC;
iii) UPADE CUSTOMER
SET PRICE = PRICE+1000

	WHERE NAME LIKE 'S%'; iv) <table><tr><td>PRODUCTNAME</td><td>CITY</td><td>PRICE</td></tr><tr><td>MOBILE</td><td>MUMBAI</td><td>70000</td></tr><tr><td>MOBILE</td><td>MUMBAI</td><td>25000</td></tr></table> v) 12	
40	A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. i. Write a user defined function CreateFile() to input data for a record and add to Book.dat . ii. Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat" OR A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage). Write a function countrec() in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%	5
Ans	import pickle def createFile(): fobj=open("Book.dat","ab") BookNo=int(input("Book Number : ")) Book_name=input("Name :") Author = input("Author:") Price = int(input("Price : ")) rec=[BookNo,Book_Name,Author,Price] pickle.dump(rec,fobj) fobj.close() def CountRec(Author): fobj=open("Book.dat","rb") num = 0 try: while True: rec=pickle.load(fobj) if Author==rec[2]: num = num + 1 except: fobj.close() return num OR import pickle def CountRec(): fobj=open("STUDENT.DAT","rb")	

```
num = 0
try:
   while True:
      rec=pickle.load(fobj)
      if rec[2] > 75:
         print(rec[0],rec[1],rec[2],sep="\t")
         num = num + 1
except:
fobj.close()
return num
```

Kendriya Vidyalaya Sangathan, Jaipur Region
Pre Board Examination 2020-21
Class: XII Session: 2020-21
Computer Science (083)

Maximum Marks: 70 Time Allowed: 3 hours

General Instructions:

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

Q.No	Part-A	Marks
	Section-I **Attempt any 15 questions from question no 1 to 21.**	
1	Can List be used as keys of a dictionary?	1
2	Which one is valid relational operator in Python i. / ii. = iii. = = iv. and	1
3	Which of the following can be used as valid variable identifiers in Python? i) 4th Sum ii) Total iii) Number# iv) _Data	1
4	Identify the mutable data types? (i) List (ii) Tuple (iii) Dictionary (iv) String	1
5	What is the length of the tuple shown below? t=((('a',1),'b','c'),'d',2),'e',3)	1

6	A non-key attribute, whose values are derived from primary key of some other table. i. Alternate Key ii. Foreign Key iii. Primary Key iv. Candidate Key	1
7	What is Telnet?	1
8	State whether the following statements is True or False. When two entities are communicating and do not want a third party to listen, this situation is defined as secure communication.	1
9	Expand the term i. XML ii. SMS	1
10	Name two web scripting languages.	1
11	What is the output of the below program? def say(message, times = 1): print(message * times) say('Hello') say('World', 5)	1
12	Name the python library need to be imported to invoke following function i. sqrt() ii. randint()	1
13	Write a Python Dictionary named classstudent with keys 12101,12102,12103 and corresponding values as 'Rahul','Ravi','Mahesh' respectively	1
14	Identify the DDL Command. (i) Insert into command (ii) Create table command (iii) Drop table Command (iv) Delete command	1
15	t1=(2,3,4,5,6) print(t1.index(4)) output is i. 4 ii. 5 iii. 6 iv. 2	1
16	Which clause is used with a SELECT command in SQL to display the records in ascending order of an attribute?	1
17	Which of these is not an example of unguided media? (i) Optical Fibre Cable (ii) Radio wave (iii) Bluetooth (iv) Satellite	1
18	A relation has 45 tuples & 5 attributes, what will be the Degree & Cardinality of that relation? i. Degree 5, Cardinality 45 ii. Degree 45, Cardinality 5 iii. Degree 50, Cardinality 45 iv. Degree 50, Cardinality 2250	1
19	In SQL, which aggregate function is used to count all records of a table?	1

20	Given employee={'salary':10000,'age':22,'name':'Mahesh'} employee.pop('age') what is output print(employee)	1
21	What is HTML?	1
	Section-II **Both the case study based questions are compulsory. Attempt any 4 subparts from each question. Each question carries 1 mark.**	
22	Parth Patel of class 12 is writing a program to create a CSV file "emp.csv" which will contain employee code and name of some employees. He has written the following code. As a programmer, help him to successfully execute the given task. import _____ #Line 1 def addemp(empcode,name):#to write/add data into the CSV file fo=open('emp.csv','a') writer=csv._____(fo) #Line 2 writer.writerow([empcode,name]) fo.close() #csv file reading code def reademp(): with open('emp.csv',_____') as fin: #Line 3 filereader=csv.reader(fin) for row in filereader: for data in row: print(data,end='\t') print(end='\n') fin._____ #Line 4 addemp('E105','Parth') addemp("E101",'Arunima') addemp("E102",'Prahalad') reademp() #Line 5 Answer the following questions: (1 mark each) (a) Name the module he should import in Line 1. (b) Fill in the blank in Line 2 to write the data in a CSV file. (c) In which mode, Parth should open the file to read the data from the file(Line 3). (d) Fill in the blank in Line 4 to close the file. (e) Write the output he will obtain while executing Line 5.	4
23	ABC school is considering to maintain their student's information using SQL to store the data. As a database administrator Harendra has decided that: Name of database : school Name of table : student Attributes of the table are as follow: AdmissionNo-numeric	4

FristName –character of size 30
LastName - character of size 20
DOB - date

Table student

AdmissionNo	FirstName	LastName	DOB
012355	Rahul	Singh	2005-05-16
012358	Mukesh	Kumar	2004-09-15
012360	Pawan	Verma	2004-03-03
012366	Mahesh	Kumar	2003-06-08
012367	Raman	Patel	2007-03-19

Attempt any four questions

	(i) What is the degree and cardinality of the table student	1
	(ii) Identify the attribute best suitable to be declared as Primary Key	1
	(iii) Insert the following data in table student AdmissionNo=012368 FirstName = Kamlesh LastName = Sharma DOB =01 Jan 2004	1
	(iv) Harendra wants to remove the data of mukesh whose admission no is 012358, suggest him SQL command to remove the above said data.	1
	(v) To remove the table student which command is used : i. Delete from student ii. Drop table student iii. Drop database school iv. Delete student from school	1
	Part-B	
	Section-I	
24	Differentiate between “w” and “r’ modes used in Python. Illustrate with suitable example.	2
25	Differentiate between fatchone() and fatchmany() method with suitable example.	2
26	What is significance of Primary Key? Give a suitable example of Primary key from a table containing some meaningful data.	2
27	Predict the output for following code. def replaceV(st): newstr = '' for character in st: if character in 'aeiouAEIOU': newstr += '*' else: newstr += character return newstr st = “Hello how are you” st1 = replaceV(st) print("The original String is:", st) print("The modified String is:", st1)	2
28	Rewrite the following code after removing syntax error and underline the	2

correction:

```
x=int("Enter value for x:")
for y in range[0,11]:
    if x=y
        print(x+y)
    else:
        Print x-y
```

29 What is protocol? Name some commonly used protocols. 2

OR

Differentiate between virus and worms in context of networking and data communication threats.

30 What is difference between actual parameter and formal parameter? Explain with suitable example. 2

31 What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? 2

```
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="#")
```

(i) 10#40#70# (iii) 50#60#70#

(ii) 30#40#50# (iv) 40#50#70#

32 Differentiate between DELETE and DROP TABLE command. 2

33 Write a program that reads a string and check whether it is a palindrome string or not. 2

Section II

34 3

Table : Employee

EmployeeId	Name	Sales	JobId
E1	Sumit Sinha	110000	102
E2	Vijay Singh Tomar	130000	101
E3	Ajay Rajpal	140000	103
E4	Mohit Kumar	125000	102
E5	Sailja Singh	145000	103

Table: Job

JobId	JobTitle	Salary
101	President	200000
102	Vice President	125000
103	Administrator Assistant	80000
104	Accounting Manager	70000
105	Accountant	65000
106	Sales Manager	80000

Give the output of following SQL statement:

(i) Select max(salary),min(salary) from job

(ii) Select Name,JobTitle, Sales from Employee,Job
where Employee.JobId=Job.JobId and JobId in (101,102)

(iii) Select JobId, count(*) from Employee group by JobId

35 Write a function in python that displays the number of lines starting with 'H' in the file "para.txt". Example, if file contains: 3

Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow
Then the lines count should be 2

OR

Write a function countmy() in Python to read file Data.txt and count the number of times "my" occur in file. For example, if the file contain
This is my website. I have displayed my preferences in the choice section
The countmy() function should display the output as :" my occurs 2 times"

36 Write a user define function in Python for push(list) and pop(list) for performing push and pop operations with a stack of list containing integers. 3

37 Write a function LShift(arr,n) in python, which accepts a list of numbers and n as numeric value by which all elements of the list are shifted to left. 3
Sample Input data of the list
Arr=[10,20,30,40,12,11]. n=2
Output
Arr[30,40,50,12,11,10,20]

Section-III

38 Write SQL Commands for the following queries based on the relations PRODUCT and CLIENT given below. 5

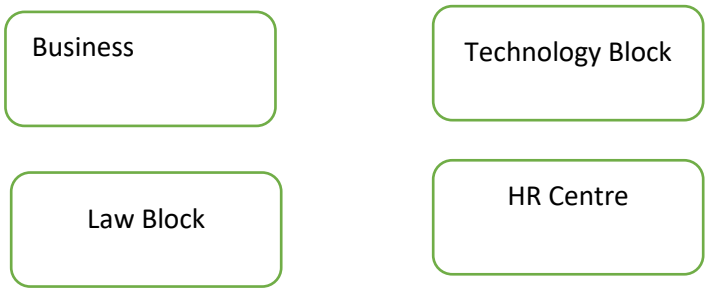
Table: Product

P_ID	ProductName	Manufacturer	Price	ExpiryDate
TP01	Talcum Powder	LAK	40	2011-06-26
FW05	Face Wash	ABC	45	2010-12-01
BS01	Bath Soap	ABC	55	2010-09-10
SH06	Shampoo	XYZ	120	2012-04-09
FW12	Face Wash	XYZ	95	2010-08-15

Table: Client

C_ID	ClientName	City	P_ID
1	Cosmetic Shop	Delhi	FW05
6	Total Health	Mumbai	BS01
12	Live Life	Delhi	SH06
15	Pretty One	Delhi	FW05
16	Dreams	Bengaluru	TP01
14	Expressions	Delhi	NULL

(i) To display the ClientName and City of all Mumbai- and Delhi-based clients in Client table.
(ii) Increase the price of all the products in Product table by 10%.
(iii) To display the ProductName, Manufacturer, ExpiryDate of all the products that expired on or before '2010-12-31'.

	(iv) To display C_ID, ClientName, City of all the clients (including the ones that have not purchased a product) and their corresponding ProductName sold. (v) To display productName, Manufacturer and ClientName of Mumbai City.	
39	Quick Learn University is setting up its academic blocks at Prayag Nagar and planning to set up a network. The university has 3 academic blocks and one human resource Centre as shown in the diagram given below:  Centre-to-Centre distance between various blocks is as follows: Law block to business block — 40 m Law block to technology block — 80 m Law block to HR block — 105 m Business block to technology block — 30 m Business block to HR block — 35 m Technology block to HR block — 15 m Number of computers in each of the buildings is as follows: Law block — 15 Technology block — 40 HR Centre — 115 Business block — 25 (a) Suggest a cable layout of connection between the blocks. (b) Suggest the most suitable place to house the server of the organization with suitable reason. (c) Which device should be placed/installed in each of these blocks to efficiently connect all the computers within these blocks? (d) The university is planning to link its sales counters situated in various parts of the other cities. Which type of network out of LAN, MAN or WAN will be formed? (e) Which network topology may be preferred in each of these blocks?	5
40	(a) Create a binary file “employee.dat” that stores the records of employees and display them one by one. (b) Display the records of all those employees who are getting salaries between 25000 to 30000. **OR** A binary file student.dat has structure (rollno,name,class,percentage). Write a program to updating a record in the file requires roll number to be fetched from the user whose name is to be updated	5

Subject Code: 20-21/CS/C

Kendriya Vidyalaya Sangathan
Jaipur Region
Pre Bord 2020-21
Class: XII Session: 2020-21
Computer Science (083)

Maximum Marks: 70 **Time Allowed: 3 hours**

Marking Scheme

Q.No	Answer	Marks
1	No	1
2	iii. = =	1
3	ii Total iv _Data	1
4	i. List iii. Dictionary	1
5	3	1
6	Foreign Key	1
7	Telnet is an internet utility that lets us log on to a remote computer system. A user is able to log in the system for sharing of files without being the actual user of that system.	1
8	True	1
9	XML-Extensible Markup Language SMS–Short Messaging Service ½ marks for each	1
10	VBScript, JavaScript, ASP, PHP, PERL and JSP etc	1
11	Hello WorldWorldWorldWorldWorld	1
12	Math,random	1
13	classstudent={12101:'Rahul',12102:'Ravi',12103:'Mahesh' }	1
14	Create table command Drop table Command	1
15	iv. 2	1
16	Order By	1
17	i. Optical Fibre	1
18	i. Degree 5, Cardinality 45	1
19	count(*)	1
20	={'salary':10000,'name':'Mahesh'}	1
21	HTML (Hyper Text Markup Language) is used to create Hypertext documents (web pages) for websites.	1
22	(a) LINE 1 : csv (b) LINE 2 : writer (c) LINE 3: r (d) LINE 4: close()	

	(e) E105 Parth E101 Arunima E102 Prahalad	
23	i. Degrre-4 Cardinility-5 ii. AdmissionNo iii. insert into student values(012368,'Kamlesh','Sharma','2004-01-01') iv. Delete command v. Drop table student **One mark for each(Any Four)**	4
24	A file is opened using "w" mode to write content into the file. A file is opened using "r" mode to read content into the file. Example: def Create(): file=open('NOTES.TXT','w') S="This is a sample" file.write(S) file.close() def Read(): file=open('NOTES.TXT','r') Lines=file.readline(); print(Lines) file.close()	2
25	fetchone() method will return only one row from the resultset in the form of tuple containg records. fetchmany(n) method will return only the n number of rows from the resultset in the form of tuple containing the records. Any example. 1 Mark for definition and 1 mark for example	2
26	A Primary Key is an attribute of a Table which has a unique value for each of the records and can be used to identify a record of the table. Example with a table. 1 Mark for significane and 1 mark for example	2
27	The original String is: Hello how are you The modified String is: H*ll* h*w *r* y**	2
28	x=int(input("Enter value for x:")) for y in range(0,11): if x==y : print(x+y) else: print (x-y)	2
29	A protocol means the rules that are applicable for a network, or we can say the common set of rules used for communication in network. ---1 marks e.g. HTTP,FTP,PPP,SMTP,POP etc ----- 1 marks of OR Viruses require an active host program or an already-infected and active operating system in order for viruses to run, cause damage and infect other executable files or documents Worms are stand-alone malicious programs that can self-replicate.	2

30	The list of identifiers used in a function call is called actual parameter(s) whereas the list of parameters used in the function definition is called formal parameter(s). Actual parameter may be value / variable or expression. Formal parameter is an identifier. Example: def area(side): # line 1 return side*side; print(area(5)) # line 2 In line 1, side is the formal parameter and in line 2, while invoking area() function, the value 5 is the actual parameter. A formal parameter, i.e. a parameter, is in the function definition. An actual parameter, i.e. an argument, is in a function call.	2
31	30#40#50#	2
32	DROP command is used to drop a table along with all the records stored in it whereas DELETE command is used to delete all the records or some of the records from a table without deleting the table.	2
33	string=input("Enter a string") length=len(string) mid=int(length/2) rev=-1 for a in range(mid): if string[a]==string[rev]: a+=1 rev-=1 else: print("string is not palindrome") break else: print("string is palindrome")	2
34	i. 200000, 65000 ii. Vijay Singh Tomar President 130000 Sumit Sinha Vice President 110000 Mohit Kumar Vice President 125000 iii. 101 1 102 2 103 2	3
35	def countH(): f=open("para.txt","r") lines=0 l=f.readlines() for i in l: if i[0]='H': lines+=1 print("NO of lines are:",lines) OR def countmy(): f=open(“Data.txt”,”r”) count=0 x=f.read()	3

	word=x.split() for i in word: if i ==”my” : count=count+1 print(“my occurs “, count, “times”)	
36	def PUSH(Arr,value): s=[] for x in range(0,len(Arr)): if Arr[x]%5==0: s.append(Arr[x]) if len(s)==0: print("Empty Stack") else: print(s) def popStack(st) : # If stack is empty if len(st)==0: print("Underflow") else: L = len(st) val=st[L-1] print(val) st.pop(L-1)	1 ½ 1 ½
37	def LShift(Arr,n): L=len(Arr) for x in range(0,n): y=Arr[0] for i in range(0,L-1): Arr[i]=Arr[i+1] Arr[L-1]=y print(Arr)	3
38	(i) select ClientName, City from Client where City = ‘Mumbai’ or City = ‘Delhi’; (ii) update Product set Price = Price + 0.10 * Price; (iii) select ProductName, Manufacturer, ExpiryDate from Product where ExpiryDate < = ‘2010-12-31’; (iv) select C_ID, ClientName, City, ProductName from Client Left Join Product on Client. P_ID = Product.P_ID; (v) select ProductName, Manufacturer, ClientName from product,client Where product.P_ID=Client.P_ID and city=’Mumbai’	5 1 mark each
40	import pickle f1 = open('emp.dat','rb') e = pickle.load(f1) for x in e:	5

```
    print(x)
f1.close()

 import   pickle
f1   =   open('emp.dat','rb')
e   =   pickle.load(f1)
for   x   in   e:
     if(e[x]>=25000   and   e[x]<=30000):
        print(x)
f1.close()
```

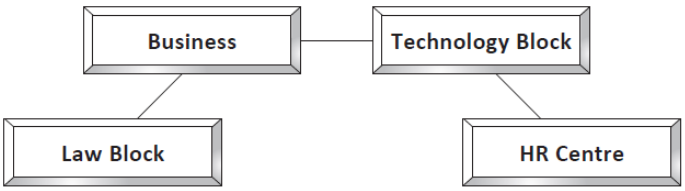
OR

```
# Program to update the name of the student from the binary file

import pickle
f = open("student", "rb+")
stud_rec = pickle.load(f) # To read the object from the opened file
found = 0
rollno = int(input("Enter the roll number to search:"))
for R in stud_rec:
    rno = R[0]
    if rno == rollno:
        print("Current name is:", R[1])
        R[1] = input("New Name:")
        found = 1
        break

if found == 1:
    f.seek(0) # Taking the file pointer to the beginning of the file
    pickle.dump(stud_rec, f)
    print("Name Updated!!!")
f.close()
```

39 (a)



5

1 mark each

(b) HR centre because it consists of the maximum number of computers to house the server.
(c) Switch should be placed in each of these blocks.
(d) MAN
(e) star

KENDRIYA VIDYALAYA SANGATHAN JAMMU REGION

1st Pre Board Examination 2020-21

COMPUTER SCIENCE

Class 12th

Time allowed: 3 hours ***Max marks: 70***

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.

2. Both Part A and Part B have choices.

3. Part-A has 2 sections:

a. Section – I is short answer questions, to be answered in one word or one line.

b. Section – II has two case studies questions. Each case study has 4 case-based sub parts. An examinee is to attempt any 4 out of the 5 subparts.

4. Part - B is Descriptive Paper.

5. Part- B has three sections

a. Section-I is short answer questions of 2 marks each in which two question have internal options.

b. Section-II is long answer questions of 3 marks each in which two questions have internal options.

c. Section-III is very long answer questions of 5 marks each in which one question has internal option.

6. All programming questions are to be answered using Python Language only

Question No.	**Part-A**	**Marks**

		allocated
	Section-I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	
1	Which of the following are valid operators in Python: (i) ** (ii) between (iii) like (iv) ||	1
2	Given the lists L=["H", "T", "W", "P", "N"] , write the output of print(L[3:4])	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 ouput 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	Name the protocol that is used to upload and download files on internet.	1
10	Your friend kaushal complaints that somebody accessed his mobile device remotely and deleted the important files. Also he claims that the password of his social media accounts were changed. What	1

	crime was Manoj a victim of? Also classify the crime on basis of it's intent (malicious / non-malicious).	
11	Anita is executing sql query but not getting the appropriate output, help her to do the correction. Select name from teacher where subject=Null;	1
12	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
13	What is the difference between where and having in SQL.	1
14	Write a command to add new column marks in table 'student' data type int.	1
15	Name the transmission media suitable to establish PAN.	1
16	Identify the data type of X: X = tuple(list((1,2,3,4,5))) Dictionary (b) string (c) tuple (d) list	1
17	Write the output of following code t1 = [10, 12, 43, 39] print(t1*3)	1
18	Write query to display the structure of table teacher.	1
19	Which is not a network topology? BUS b. STAR c. LAN d. RING	1
20	In SQL, what is the use of BETWEEN operator?	1

21	Which of the following appears harmless but actually performs malicious functions such as deleting or damaging files. (a) WORM (b) Virus (c) Trojan Horse (d) Malware	1
	Section-II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
22	A school KV is considering to maintain their eligible students' for scholarship's data using SQL to store the data. As a database administer, 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	Avg Mark	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	

(A)	Write query to create table.	1
(b)	Which column is suitable to be a primary key attribute.	1
(C)	What is the degree and cardinality of table student.	1
(d)	Display the details of student in ascending order of name.	1
(e)	Write query to change the grade of karan from 'B' to 'A'	1
23	Amit Kumar of class 12 is writing a program to store roman numbers and find their equivalents using a dictionary. He has written the following code. As a programmer, help him to successfully execute the given task. import _____ #Line 1 numericals = {1: 'I', 4 : 'IV', 5: 'V' , 9: 'IX', 10:'X', 40:'XL',50:'L', 90:'XC', 100:'C',400:'CD',500:'D',900:'CM',1000:'M'}	

	file1 = open("roman.log","_____") #Line 2 pickle.dump(numerals,file1) file1.close() file2 = open("roman.log",'_____") #Line 3 num = pickle.load(file2) file2._____ #Line 4 n = 0 while n!=-1: print("Enter 1,4,5,9,10,40,50,90,100,400,500,900,1000:") print("or enter -1 to exit") n = int(input("Enter numbers")) if n!= -1: print("Equivalent roman number of this numeral is:",num[n]) else: print("Thank You")	
	(a) Name the module he should import in Line 1.	1
	(b) In which mode, Amit should open the file to add data into the file in Line #2	1
	(c) Fill in the blank in Line 3 to read the data from a binary file.	1
	(d) Fill in the blank in Line 4 to close the file.	1
	(e) Write the output he will obtain while input is 100.	1
	PART - B	
	SECTION - I	
24.	Evaluate the following expression.	2

	a) 51+4-3**3//19-3 b) 17<19 or 30>18 and not 19==0	
25	What is the difference between hub and switch? Which is more preferable in a large network of computers and why? OR Differentiate between WAN and MAN. Also give an example of WAN.	2
26	What are the full form of following term? a. HTML b. ITA c. SIP d. GSP	2
27	What do you mean by keyword argument in python? Describe with example. OR What is scope of a variable in python and write basic scopes of variables in Python.	2
28	Rewrite the following code in python after removing all syntax errors. Underline each correction done in the code: Def func(a): for i in (0,a): if i%2 =0: s=s+1 else if i%5= =0 m=m+2 else:	2

	n=n+i print(s,m,n) func(15)	
29	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 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)) (i) 15 122 84 2500 (ii) 21 120 76 1500 (iii) 105 107 105 1800 (iv) 110 105 105 1900	2
30	What is Constraint ? Give example of any two constraints.	2
31	Write the steps to perform an Insert query in database connectivity application. Table ‘student’ values are rollno, name, age (1,’AMIT’,22)	2
32	Differentiate between Primary key and Candidate key.	2
33	Predict the output of the following code. def swap(P ,Q): P,Q=Q,P print(P,"#",Q) return (P)	2

<table>
<tr><td></td><td>R=100
S=200
R=swap(R,S)
print(R,"#",S)</td><td></td></tr>
<tr><td></td><td>Section II</td><td></td></tr>
<tr><td>34</td><td>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:
a=[10,20,23,45]
listchange(a,4)
output : [10, 10, 115, 225]</td><td>3</td></tr>
<tr><td>35</td><td>Write a Python program to find the number of lines in a text file ‘abc.txt’.
OR
Write a Python program to count the word “if “ in a text file abc.txt’.</td><td>3</td></tr>
<tr><td>36</td><td>Write the outputs of the SQL queries (i) to (iii) based on the relations Client and Product given below:

Client
<table>
<tr><td>C_ID</td><td>ClientName</td><td>City</td><td>P_ID</td></tr>
<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>
</table></td><td>3</td></tr>
</table>

05	Dreams	Delhi	TP01	

Product

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	

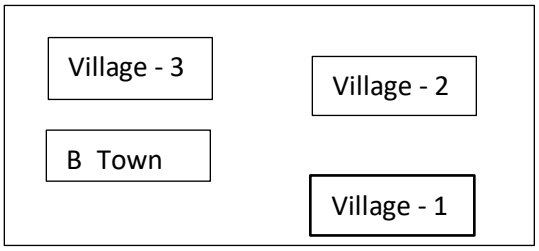
i. SELECT count(discount) FROM Product ;
ii. SELECT Manufacturer ,Max(Price), Min(Price) FROM Product group by manufacturer;
iii. SELECT ProductName, Client.ClientName FROM Product, Client WHERE Product.P_ID = Client.P_ID AND Client.City="Mumbai";

37	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 . OR Write InsertQ(C) and DeleteQ(C) methods/functions in Python to add a new Customer and delete a Customer from a list of Customer names, considering them to act as insert and delete operations of the Queue	3
	Section III	
38	Zigma is a knowledge and skill community which has an aim to uplift the standard of knowledge and skills in the society. It is	5

planning to set-up its training centers in multiple towns and villages in India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as follows. As a network consultant, you have to suggest the best network related solutions for their issues/problems raised in (i) to (v) keeping in mind the distances between various locations and other given parameters.

A-HUB Head Office

B-HUB



Distance between different locations

Village – 1 to B_Town	2 KM
Village – 2 to B_Town	1 KM
Village – 3 to B_Town	1.5 KM
Village – Village –	3.5 KM
Village – Village –	4.5 KM
Village – Village –	2.5 KM
A_CITY Head Office – B_Hub	25 KM

No. fo computers in various places

B_Town	120

Village – 1	15
Village – 2	10
Village – 3	15
A_City Head Office	6

NOTE : In Villages, there are community centers, in which one room has been given as training center to this organisation to install computers.

The organisation has got financial support from the government and top IT companies.

1. Suggest the most appropriate location of the SERVER in the B_HUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.
2. Suggest the best wired medium and draw the cable layout (location to location) to efficiently connect various location within the B_HUB.
3. Which hardware device will you suggest to connect all the computers within each location of B_HUB?
4. Which service/protocol will be most helpful to conduct live interactions of Experts from Head Office and people at all locations of B_HUB?
5. Which hardware device will you suggest to be procured by the company to be installed to protect and control the Internet uses within the campus?

39 **Consider the following tables Sender and Recipient. Write SQL commands for the statements (a) to (c) and give the outputs for SQL queries (d) to (e).** 5

Sender

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

Recipients

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 East	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminals	Mumbai
ND48	ND50	S Tripathi	13, BI D Mayur Vihar	New delhi

a. To display the RecIC, Sendername, SenderAddress, RecName, RecAddress for every Recipient

b. To display Recipient details in ascending order of RecName

c. To display number of Recipients from each city

d. To display the details of senders whose sender city is ‘mumbai’

	e. To change the name of recipient whose recid is 'Ko05' to' S Rathore'.	
40	A binary file "emp.dat" has structure [EID, Ename, designation, salary]. i. Write a user defined function CreateEmp() to input data for a record and create a file emp.dat. ii. Write a function display() in Python to display the detail of all employees whose salary is more than 50000. OR i. A binary file "emp.DAT" has structure (EID, Ename, designation,salary). Write a function to add more records of employes in existing file emp.dat. **ii.** Write a function Show() in Python that would read detail of employee from file "emp.dat" and display the details of those employee whose designation is "Salesman".	5

KENDRIYA VIDYLAYA SANGATHAN JAMMU REGION
I PREBOARD EXAMINATION 2020-21
CLASS: XII
Computer Science – 083

MARKING SCHEME

Maximum Marks: 70 **Time Allowed: 3 hours**

	Part – A Section - I	
1	a) (I) and (iv)	1
2	[“N”]	1
3	F=open("ABC.TXT","r")	1
4	False	1
5	20,40,60,80	1
6	dict_keys(['amit', 'vishal'])	1
7	It will show error tuple is immutable.	1
8	gcd (x , y) which is a part of math module in python	1
9	FTP or HTTP	1
10	The gaining of unauthorized access to data in a system or computer is termed as hacking. It can be classified in two ways: (i) Ethical Hacking (ii)Cracking	1
11	Select name from teacher where subject is Null;	1
12	Count(*) will count rows where as count(name) will count name column only which is having one null value.	1
13	Where is used apply condition in query, where as having is used only with group.	1
14	Alter table student add marks int(3)	1
15	Bluetooth, infra red	1
16	tuple	1
17	[10, 12, 43, 39, 10, 12, 43, 39, 10, 12, 43, 39]	1
18	Desc teacher;	1
19	(C)	1

20	The BETWEEN operator selects values within a given range.	1
21	(c) Trojan Horse	1
22	(i) P_ID is Best suitable primary key 1 mark for correct (ii) Degree = 4, cardinality = 5 (iii) Insert into PRODUCT values('WP01', 'Washing Powder','null','150); (iv) a (v) show tables	1 1 1 1 1
23	(a) pickle	1
	(b) wb	1
	(c) rb	1
	(d) file2.close()	1
	(e) C	1
24	51 True 1 mark for each correct answer.	2
25	Hub forwards the message to every node connected and create a huge traffic in the network hence reduces efficiency whereas a Switch is also called intelligent hub since it redirects the received information/ packet to the intended node(s). In a large network a switch is preferred to reduce the unwanted traffic in the network which may also reduce the bandwidth and cause network congestion. 1 mark for each OR	2

	WAN is also called as Wide Area Network. It is a network of computing devices crossing the limits of city, country or continent. It covers area of over hundreds or thousands of kilometres radius. For example: Network of ATMs, BANKs, National or International organization offices spread over a country or continent. MAN is also called as Metropolitan Area Network. It is a network of communicating devices within a city. It covers an area of few kilometres to few hundreds kilometres. For example: Network of schools, bank, and government offices within a city. Best example of WAN is the Internet. 1 mark for each	
26	Ans. a. PHP-Hypertext Text markup Language b. ITA-Information Technology Act c. SIP- Session Initiation Protocol d. GSP-Global system for mobile communication ½ mark for each.	2
27	When you assign a value to the parameter (such as param=value) and pass to the function (like fn(param=value)), then it turns into a keyword argument. Or Ans. The program part(s) in which a particular piece of code or data value can be accessed is known as variable scope. In python broadly scopes can either be global scope or local scope.	2
28	def func(a): #def s=m=n=0 #local variable	2

	for i in (0,a): #indentation and frange function missing if i%2==0: s=s+i elif i%5==0: #elif and colon m=m+i else: n=n+i print(s,m,n) #indentation func(15) 2 amrks for any four corrections.	
29	(i) (ii) are correct answers.	2
30	Constraints are the checking condition which we apply on table to ensure the correctness of data . example primary key, nut null, default, unique etc 1 mark for definition. 1 mark for 2 examples.	2
31	import mysql.connector as mydb conn= mydb.connect(host="localhost", user="root", passwd="1234") cur=conn.cursor() cur.execute("INSERT INTO student values(1,'AMIT',22);") cur.commit() ½ mark for import ½ for connection ½ for execute ½ for commit	2
32	Primary key is an attribute or set of attributes that uniquely identify the values and can appear as foreign key in another table.. Candidate key is an attribute or set of attributes that you can consider as a Primary key.	2

	1 mark for each.	
33	200 # 100 200 # 200 1 mark for each line	2
34	def listchange(arr,n): l=len(arr) for a in range(l): if(arr[a]%2==0): arr[a]=10 else: arr[a]=arr[a]*5 a=[10,20,23,45] listchange(a) print(a) 1 mark for function 1 mark for loop and condition checking 1 mark for if and else	3
35	f=open("C:\\xii_ip\\abc.txt","r") linesList=f.readlines() count=len(linesList) print(count) f.close() 1 mark for open() 1 mark for readlines() 1 mark for count and close OR file=open("C:\\xii_ip\\abc.txt","r") c=0 line = file.read() word = line.split()	3

```
for w in word:
    if w=='if':
        print( w)
        c=c+1
print(c)
file.close()
```

1 mark for open() 1 mark for read() and split() 1 mark for count and close

36 (i) 2

(ii)

Manufacturer	Min	max
LAK	40	40
ABC	45	55
XYZ	95	120

(iii)

ProductName	ClientName
Face Wash	Total Health

37

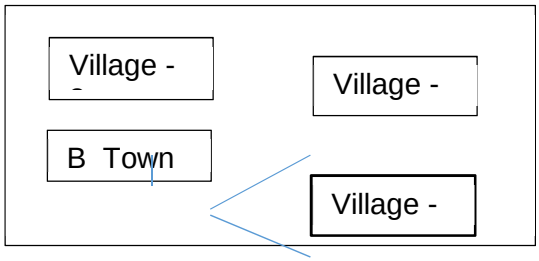
```
def PushEl(element):
    a=int(input("enter package title : "))
    element.append(a)
def PopEl(element):
    if (element==[]):
    print( "Stack empty")
    else:
    print ("Deleted element:", element.pop())
```

or

```
def InsertQ(queue):
    a=input("Enter customer name :")
    queue.append(a)
def DeleteQ(queue):
    if (queue==[]):
        print ("Queue is empty…..")
    else:
        print("Deleted element is", queue[0])
        del queue[0]
```

38 . B_Town

2. Star Topology

	 3. Hub/ Switch 4. Telnet 5. Firewall	
39	a. Select R.RecIC, S.Sendername, S.SenderAddress, R.RecName, R.RecAddress from Sender S, Recepient R where S.SenderID=R.SenderID ; b. SELECT * from Recipent ORDER By RecName; c. SELECT COUNT(*) from Recipient Group By RecCity; d.Select * from sender where Sendercity=’mumbai’; e. update recipient set RecName=’S Rathore’ where RecID=’ KO05’ 1 mark for each correct answer.	5
40	import pickle def CreateEmp(): f1=open("C:\\xii_ip\\emp.dat",'wb') eid=input("Enter E. Id") ename=input("Enter Name") designation=input("Enter Designation") salary=int(input("Enter Salary")) l=[eid,ename,designation,salary] pickle.dump(l,f1)	5

```
    f1.close()
import pickle
def display():
    f2=open("C:\\xii_ip\\emp.dat","rb")
    try:
        while True:
            rec=pickle.load(f2)
            if rec[3]>5000:
                print(rec[0],rec[1],rec[2],rec[3])
    except:
        f2.close()
display()
```

2 and ½ mark for each function

OR

(i)

```
import pickle
def createemp:
    f1=open("emp.dat",'ab')
    eid=input("Enter E. Id")
    ename=input("Enter Name")
    designation=input("Enter Designation")
    salary=int(input("Enter Salary"))
    l=[eid,ename,designation,salary]
    pickle.dump(l,f1)
    f1.close()
```

ii)

```
def display():
    f2=open("emp.dat","rb")
    try:
        while True:
            rec=pickle.load(f2)
            if (rec[2]=='Manager'):
                print(rec[0],rec[1],
                    rec[2],rec[3])
    except:
            break
    f2.close()
```

KENDRIYA VIDYALAYA, Kolkata region
Class: XII Session: 2020-21

Computer Science (083)

PREBOARD EXAM (Theory)

Maximum Marks: 70 **Time Allowed: 3 hours**

General Instructions:

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

Question No.	**Part-A**	**Marks allocated**
	Section-I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	
1	Find the invalid identifier from the following a) yourName b) _false c) 2My_Name d) My_Name	1
2	Given the lists L=[1,3,6,82,5,7,11,92] , write the output of print(L[1:6])	1
3	Rearrange the following terms in increasing order of data transfer rates. Gbps, Mbps, Tbps, Kbps, Bps	
4	Which of the following is a valid assignment operator in Python ? a) ? b) < c) =* d) and e) //	1

5	Suppose a tuple T is declared as T = (10, 12, 43, 39), which of the following is incorrect? a) print(T[1]) b) T[3] = 9 c) print(max(T)) d) print(len(T))	1
6	Write a statement in Python to declare a dictionary whose keys are 1, 2, 3 and values are Monday, Tuesday and Wednesday respectively.	1
7	A tuple is declared as T = (2,5,6,9,8) What will be the value of sum(T)?	1
8	Name the built-in mathematical function / method that is used to return an absolute value of a number.	1
9	Name the protocol that is used to send emails.	1
10	Your friend Ranjana complaints that somebody has created a fake profile on Facebook and defaming her character with abusive comments and pictures. Identify the type of cybercrime for these situations.	1
11	In SQL, name the clause that is used to display the tuples in ascending order of an attribute.	1
12	In SQL, what is the use of IS NULL operator?	1
13	Write any one aggregate function used in SQL.	1
14	Which of the following is a DDL command? a) SELECT b) ALTER c) INSERT d) UPDATE	1
15	Name The transmission media best suitable for connecting to hilly areas.	1
16	Identify the valid declaration of L: L = [‘Mon’, ‘23’, ‘hello’, ’60.5’]	1

	a. dictionary b. string c.tuple d. list	
17	If the following code is executed, what will be the output of the following code? name="ComputerSciencewithPython" print(name[3:10])	1
18	In SQL, write the query to display the list of tables stored in a database.	1
19	Write the expanded form of Wi-Fi.	1
20	Which of the following types of table constraints will prevent the entry of duplicate rows? a) check b) Distinct c) Primary Key d) NULL	1
21	Write the full form of CSV.	1
	Section-II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
22	A departmental store MyStore is considering to maintain their inventory using SQL to store the data. As a database administer, Abhay has decided that : • Name of the database - mystore • Name of the table - STORE • The attributes of STORE are as follows: ItemNo - numeric ItemName – character of size 20 Scode - numeric Quantity – numeric	

Table : STORE

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

(a) Identify the attribute best suitable to be declared as a primary key, 1

(b) Write the degree and cardinality of the table STORE. 1

(c) Insert the following data into the attributes ItemNo, ItemName and SCode respectively in the given table STORE. 1
ItemNo = 2010, ItemName = “Note Book” and Scode = 25

(d) Abhay want to remove the table STORE from the database MyStore. 1
Which command will he use from the following:
a) DELETE FROM store;
b) DROP TABLE store;
c) DROP DATABASE mystore;
d) DELETE store FROM mystore;

(e) Now Abhay wants to display the structure of the table STORE, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same. 1

23 Ranjan Kumar of class 12 is writing a program to create a CSV file “user.csv” which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____                                    # Line 1

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

	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	
	(a) Name the module he should import in Line 1.	1
	(b) In which mode, Ranjan should open the file to add data into the file	1
	(c) Fill in the blank in Line 3 to read the data from a csv file.	1
	(d) Fill in the blank in Line 4 to close the file.	1
	(e) Write the output he will obtain while executing Line 5.	1
	Part – B	
	Section-I	
24	Evaluate the following expressions: a) 6 * 3 + 4**2 // 5 – 8 b) 10 > 5 and 7 > 12 or not 18 > 3	2
25	Differentiate between Viruses and Worms in context of networking and data communication threats. **OR** Differentiate between Web server and web browser. Write any two popular web browsers.	2
26	Expand the following terms: a. SMTP b. XML c. LAN d. IPR	2

27	Differentiate between actual parameter(s) and a formal parameter(s) with a suitable example for each. **OR** Explain the use of global key word used in a function with the help of a suitable example.	2
28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. Value=30 for val in range(0,Value) If val%4==0: print (val*4) Elseif val%5==0: print (val+3) Else print(val+10)	2
29	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables Lower and Upper. import random AR=[20,30,40,50,60,70]; Lower =random.randint(1,3) Upper =random.randint(2,4) for K in range(Lower, Upper +1): print (AR[K],end="#") (i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#	2
30	What do you understand by Candidate Keys in a table? Give a suitable example of Candidate Keys from a table containing some meaningful data.	2

31	Differentiate between *fetchone()* and *fetchall()* methods with suitable examples for each.	2
32	Write the full forms of DDL and DML. Write any two commands of DML in SQL.	2
33	Find and write the output of the following Python 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')	2
	Section- II	
34	Write a function LShift(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 left. Sample Input Data of the list Arr= [10,20,30,40,12,11], n=2 Output Arr = [30,40,12,11,10,20]	3
35	Write a function in Python that counts the number of “Me” or “My” words present in a text file “STORY.TXT”. If the “STORY.TXT” contents are as follows: My first book was Me and	3

My Family. It
gave me
chance to be
Known to the
world.

The output of the function should be:

Count of Me/My in file: 4

OR

Write a function AMCount() in Python, which should read each character of a text file STORY.TXT, should count and display the occurance of alphabets A and M (including small cases a and m too).

Example:

If the file content is as follows:

Updated information
As simplified by official websites.

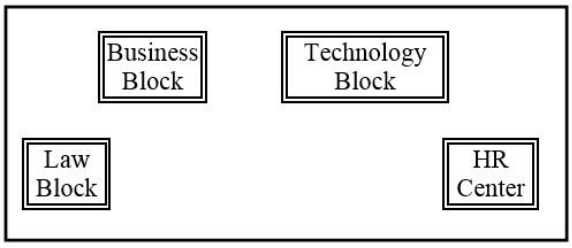
The EUCount() function should display the output as:

A or a:4
M or m :2

36 Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below: 3

Table : Teacher

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

	Table : Posting P_ID | Department | Place 1 | History | Agra 2 | Mathematics | Raipur 3 | Computer Science | Delhi i. SELECT Department, count(*) FROM Teacher GROUP BY Department; ii. SELECT Max(Date_of_Join),Min(Date_of_Join) FROM Teacher; iii. SELECT Teacher.name,Teacher.Department, Posting.Place FROM Teachr, Posting WHERE Teacher.Department = Posting.Department AND Posting.Place=”Delhi”;	
37	Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. **OR** Write a function in Python POP(Arr), where Arr is a stack implemented by a list of numbers. The function returns the value deleted from the stack.	3
	Section-III	
38	MyPace 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 the diagram below:  Center to Center distances between various blocks/center is as follows:	5

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

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

a) Suggest the most suitable place (i.e., Block/Center) to install the server of this University with a suitable reason.

b) Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.

c) 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.

d) Suggest the placement of a Repeater in the network with justification.

e) 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.

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

Table : Teacher

T_ID	Name	Age	Department	Date_of_join	Salary	Gender
1	Jugal	34	Computer Sc	10/01/2017	12000	M
2	Sharmila	31	History	24/03/2008	20000	F

3	Sandeep	32	Mathematics	12/12/2016	30000	M
4	Sangeeta	35	History	01/07/2015	40000	F
5	Rakesh	42	Mathematics	05/09/2007	25000	M
6	Shyam	50	History	27/06/2008	30000	M
7	Shiv Om	44	Computer Sc	25/02/2017	21000	M
8	Shalakha	33	Mathematics	31/07/2018	20000	F

Table : Posting

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

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

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

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

iv. To display teacher's name, salary, age for male teachers only.

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

40 5

A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price].

i. Write a user defined function *CreateFile()* to input data for a record and add to Book.dat .

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

OR

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

KENDRIYA VIDYALAYA Kolkata region
PREBOARD EXAM - 2021

Computer Science – 083

MARKING SCHEME

Maximum Marks: 70 **Time Allowed: 3 hours**

	Part – A **Section - I**	
1	c) 2My_Name	1
2	[3,6,82,5,7]	1
3	Bps, Kbps, Mbps, Gbps, Tbps	1
4	e) *=	1
5	b) T[3]= 9 (as tuple is immutable)	1
6	Day={1:'monday',2:'tuesday',3:'wednesday'}	1
7	30	
8	abs()	1
9	SMTP	1
10	Cyber Stalking / Identity theft.	1
11	ORDER BY	1
12	To check if the column has null value / no value	1
13	SUM / AVG / COUNT / MAX / MIN	1
14	b) ALTER	1
15	Microwave / Radio wave	1
16	d. List	1
17	puterSc	1
18	SHOW TABLES	1
19	Wireless Fidelity	1
20	(c) Primary Key	1
21	Comma Separated Value	1
	Part – A **Section - II**	
22	(a) ItemNo	1
	(b) Degree = 4 Cardinality = 7	1
	(c) INSERT INTO store (ItemNo,ItemName,Scode) VALUES(2010, “Note Book”,25);	1
	(d) DROP TABLE store;	1
	(e) Describe Store;	1
23	(a) Line 1 : csv	1
	(b) Line 2 : a	1
	(c) Line 3 : reader	1
	(d) Line 4 : close()	1

	(e) Line 5 : Arjun 123@456 Arunima aru@nima Frieda myname@FRD	1
	Part – B	
24	a) 13 b) False	2
25	Viruses require an active host program or an already-infected and active operating system in order for viruses to run, cause damage and infect other executable files or documents Worms are stand-alone malicious programs that can self-replicate. **OR** **Web Browser** : A web browser is a software application for accessing information on the World Wide Web. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device. **Web Server** : A web server is a computer that runs websites. The basic objective of the web server is to store, process and deliver web pages to the users. This intercommunication is done using Hypertext Transfer Protocol (HTTP). Popular web browsers : Google Chrome, Mozilla Firefox, Internet Explorer etc	2
26	a. SMTP - Simple Mail Transfer Protocol b. XML - eXtensible Markup Language c. LAN – Local Area Network d. IPR – Intellectual Property Rights	2
27	The list of identifiers used in a function call is called actual parameter(s) whereas the list of parameters used in the function definition is called formal parameter(s). Actual parameter may be value / variable or expression. Formal parameter is an identifier. Example: def area(side): # line 1 return side*side; print(area(5)) # line 2 In line 1, side is the formal parameter and in line 2, while invoking area() function, the value 5 is the actual parameter.	2

	A formal parameter, i.e. a parameter, is in the *function definition*. An actual parameter, i.e. an argument, is in a *function call*. **OR** Use of global key word: In Python, global keyword allows the programmer to modify the variable outside the current scope. It is used to create a global variable and make changes to the variable in local context. A variable declared inside a function is by default local and a variable declared outside the function is global by default. The keyword global is written inside the function to use its global value. Outside the function, global keyword has no effect. Example c = 10 # global variable def add(): global c c = c + 2 # global value of c is incremented by 2 print("Inside add():", c) add() c=15 print("In main:", c) output: Inside add() : 12 In main: 15	
28	**CORRECTED CODE:** Value=30 for VAL in range(0,Value) : # Error 1 if val%4==0: # Error 2 print (VAL*4) elif val%5==0: # Error 3 print (VAL+3) else: # Error 4 print(VAL+10)	2
29	OUTPUT: (ii) Maximum value of Lower: 3 Maximum value of Upper: 4	2
30	A table may have more than one such attribute/group of attributes that identifies a tuple uniquely, all such attribute(s) are known as Candidate Keys.	2

Table:Item

Ino	Item	Qty
I01	Pen	500
I02	Pencil	700
I04	CD	500
I09		700
I05	Eraser	300
I03	Duster	200

In the above table Item, ItemNo can be a candidate key

31 fetchall() fetches all the rows of a query result. An empty list is returned if there is no record to fetch the cursor. 2

fetchone() method returns one row or a single record at a time. It will return None if no more rows / records are available.

Any example.

32 DDL – Data Definition Language 2

DML – Data Manipulation Language

Any two out of INSERT, DELETE, UPDATE

33 OUTPUT : fUN#pYTHONn#. 2

34
```
def LShift(Arr,n):
    L=len(Arr)
    for x in range(0,n):
        y=Arr[0]
        for i in range(0,L-1):
            Arr[i]=Arr[i+1]
        Arr[L-1]=y
    print(Arr)
```
Note : Using of any correct code giving the same result is also accepted. 3

35
```
def displayMeMy():
    num=0
    f=open("story.txt","rt")
    N=f.read()
    M=N.split()
    for x in M:
        if x=="Me" or x== "My":
            print(x)
            num=num+1
    f.close()
    print("Count of Me/My in file:",num)
```
3

OR

```
def count_A_M():
    f=open("story.txt","r")
    A,M=0,0
    r=f.read()
    for x in r:
        if x[0]=="A" or x[0]=="a" :
            A=A+1
        elif x[0]=="M" or x[0]=="m":
            M=M+1
    f.close()
    print("A or a: ",A)
    print("M or m: ",M)
```

Note : Using of any correct code giving the same result is also accepted.

36 **OUTPUT:** 3

i.

Department	Count(*)
History	3
Computer Sc	2
Mathematics	3

ii. Max - 31/07/2018 or 2018-07-31 Min- 05/09/2007 or 2007-09-05

iii.

name	Department	Place
Jugal	Computer Sc	Delhi
Shiv Om	Computer Sc	Delhi

37 **ANSWER: (Using of any correct code giving the same result is also accepted.)** 3

```
def PUSH(Arr,value):
  s=[]
   for x in range(0,len(Arr)):
       if Arr[x]%5==0:
           s.append(Arr[x])
   if len(s)==0:
```

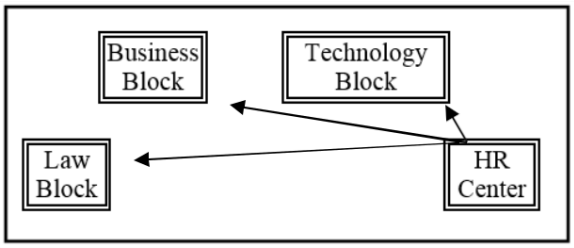
```
    print("Empty Stack")
else:
    print(s)
```

OR

```
def popStack(st) :
# If stack is empty
if len(st)==0:
    print("Underflow")
else:
    L = len(st)
    val=st[L-1]
    print(val)
    st.pop(L-1)
```

38 a. Most suitable place to install the server is HR center, as this center has maximum number of computers. 5

b.



c. Hub / Switch

d. Repeater may be placed when the distance between 2 buildings is more than 70 meter.

e. WAN, as the given distance is more than the range of LAN and MAN.

39 i. SELECT * FROM teacher WHERE department= “History”; 5

ii. SELECT name FROM teacher WHERE department= “Mathematics” AND gender= “F”;

iii. SELECT name FROM teacher ORDER BY date_of_join;

iv. SELECT name, salary, age FROM teacher WHERE gender=’M’;

v. SELECT name, salary*0.1 AS ‘Bonus’ FROM teacher;

40 **ANSWER: (Using of any correct code giving the same result is also accepted.)** 5

(i)

```
import pickle
def createFile():
    fobj=open("Book.dat","ab")
    BookNo=int(input("Book Number : "))
    Book_name=input("Name :")
    Author = input("Author: ")
    Price = int(input("Price : "))
    rec=[BookNo,Book_Name,Author,Price]
    pickle.dump(rec,fobj)
    fobj.close()
```

(ii)

```
def CountRec(Author):
    fobj=open("Book.dat","rb")
    num = 0
    try:
        while True:
            rec=pickle.load(fobj)
            if Author==rec[2]:
                num = num + 1
    except:
        fobj.close()
    return num
```

OR

```
import pickle
def CountRec():
    fobj=open("STUDENT.DAT","rb")
    num = 0
    try:
        while True:
            rec=pickle.load(fobj)
            if rec[2] > 75:
                print(rec[0],rec[1],rec[2],sep="\t")
                num = num + 1
    except:
        fobj.close()
    return num
```

Candidates Roll No | | | | | | | |

KENDRIYA VIDYALAYA SANGATHAN MUMBAI REGION (NASIK CLUSTER)

FIRST PRE-BOARD EXAMINATION 2020 – 21

CLASS: XII

SUBJECT: 083 – COMPUTER SCIENCE

DURATION: 3 HRS. **MAX. MARKS: 70**

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part - A has 2 sections:

a. Section – I is short answer questions, to be answered in one word or one line.

b. Section – II has two case studies questions. Each case study has 4 case-based sub - parts. An examinee is to attempt any 4 out of the 5 subparts.

4. Part - B is Descriptive Paper and it has three sections
   a. Section - I is short answer questions of 2 marks each in which two question have internal choices.
   b. Section - II is long answer questions of 3 marks each in which two questions have internal choices.
   c. Section - III is very long answer questions of 5 marks each in which one question has internal choice.
5. All programming questions are to be answered using Python Language only.

PART – A

SECTION – I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.

1. Which of the following is not a valid identifier in Python? 1

   a) KV2 b) _main c) Hello_Dear1 d) 7 Sisters

2. A variable created or defined in a function body is known as… 1

   a) local b) global c) built-in d) instance

3. Suppose **list1 = [0.5 * x for x in range(0,4)],** list1 is 1

   a) [0, 1, 2, 3] b) [0, 1, 2, 3, 4]

   c) [0.0, 0.5, 1.0, 1.5] d) [0.0, 0.5, 1.0, 1.5, 2.0]

4. Which statement is not correct 1

a) The statement x = x + 10 is a valid statement

b) List slice is a list itself.

c) Lists are immutable while strings are mutable.

d) Lists and strings in pythons support two way indexing.

5. What will be the output of following code snippet: 1

msg = “Hello Friends”

msg [: : -1]

a) Hello b) Hello Friend c) 'sdneirF olleH' d) Friend

6. Which of the following function is used to write data in binary mode? 1

a) write ( ) b) output ( ) c) dump ( ) d) send ( )

7. Suppose a tuple T1 is declared as 1

T1 = (10, 20, 30, 40, 50)

which of the following is incorrect?

a) print(T[1]) b) T[2] = -29 c) print(max(T)) d) print(len(T))

8. What will be output of following: 1

d = {1 : “SUM”, 2 : “DIFF”, 3 : “PROD”}

for i in d:

print (i)

a) 1 b) SUM c) 1 d) 3

2 DIFF SUM SUM

3 PROD 2 3

DIFF DIFF

3 3

PROD PROD

9. What will be output of following code: 1

X = 50

def funct(X):

X = 2

funct (X)

print(„Xis now: „,X)

a) X is now: 50 b) X is now: 2 c) Error d) None of the above

10. To read the next line from the file object fob, we can use: 1

a) fob.read(2) b) fob.read( ) c) fob.readline( ) d) fob.readlines( )

11. TCP/IP stands for 1

a) Transmission Communication Protocol / Internet Protocol

b) Transmission Control Protocol / Internet Protocol

c) Transport Control Protocol / Interwork Protocol

d) Transport Control Protocol / Internet Protocol

12. An attack that encrypts files in a computer and only gets decrypted after paying money to the attacker.. 1

a) Botnet b) Trojan c) Ransomware d) Spam

13. Which is known as range operator in MySQL. 1

a) IN b) BETWEEN c) IS d) DISTINCT

14. If column “salary” of table “EMP” contains the dataset {10000, 15000, 25000, 10000, 25000}, what will be the output of following SQL statement? 1

SELECT SUM(DISTINCT SALARY) FROM EMP;

a) 75000 b) 25000 c) 10000 d) 50000

15. Which of the following functions is used to find the largest value from the given data in MySQL? 1

a) MAX ( ) b) MAXIMUM ( ) c) LARGEST ( ) d) BIG ( )

16. Name the clause used in query to place the condition on groups in MySQL? 1

17. Write the name of topology in which all the nodes are connected through a single Coaxial cable? 1

18. Write SQL statement to find total number of records in table EMP? 1

19. Write full form of VoIP. 1

20. Write command to list the available databases in MySQL. 1

21. Expand the term DHCP. 1

SECTION – II

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

22. An organization SoftSolutions is considering to maintain their employees records using SQL to store the data. As a database administer, Murthy has decided that :

- Name of the database - DATASOFT
- Name of the table - HRDATA
- The attributes of HRDATA are as follows:

ECode – Numeric

EName – character of size 30

Desig – Character of size 15

Remn – numeric

Table: HRDATA

ECode	EName	Desig	Remn
80001	Lokesh	Programmer	50000
80004	Aradhana	Manager	65000
80007	Jeevan	Programmer	45000
80008	Arjun	Admin	55000
80012	Priya	Executive	35000

a) Identify the attribute best suitable to be declared as a primary key. 1

b) Write the degree and cardinality of the table HRDATA, 1

c) Write command to insert following data in the table: 1

ECode = 80015, Ename = “Allen” Remn = 43000

d) Write SQL statement to delete the record of Jeevan from the table HRDATA. 1

e) Write SQL statement to increase the Remn of all the employees by 10 percent. 1

23. MOHIT of class 12 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
```

(a) Name the module he should import in Statement 1. 1

(b) In which mode, MOHIT should open the file to search the data in the file in statement 2? 1

(c) Fill in the blank in Statement 3 to read the data from the file. 1

(d) Fill in the blank in Statement 4 to close the file. 1

(e) Write the full form of CSV. 1

PART – B

SECTION – I

24. Evaluate following expressions: 2

a) 18 % 4 ** 3 // 7 + 9 b) 2 > 5 or 5 == 5 and not 12 <= 9

25. Write two characteristics of Wi-Fi. 2

OR

Write two advantages of using an optical fibre cable over an Ethernet cable.

26. Expand the following terms: 2

a) GSM b) POP c) JSP d) CDMA

27. What is a module in Python? Define any two functions of Math module in python. 2

OR

Differentiate between Positional Argument and Default Argument of function in python with suitable example

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

```
Num = int(input("Number:")
s=0
for i in range(1,Num,3)
        s+=1
if i%2=0:
   print(i*2)
Else
   print(i*3)
print (s)
```

29. What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the minimum and maximum values that can be assigned to the variable End . 2

```
import random
Colours = ["VIOLET","INDIGO","BLUE","GREEN", "YELLOW","ORANGE","RED"]
End = randrange(2)+3
Begin = randrange(End)+1
for i in range(Begin,End):
   print(Colours[i],end="&")
```

(i) INDIGO&BLUE&GREEN& (ii) VIOLET&INDIGO&BLUE&

(iii) BLUE&GREEN&YELLOW& (iv) GREEN&YELLOW&ORANGE&

30. Differentiate between an Attribute and a Tuple in a Relational Database with suitable example. 2

31. Differentiate between fetchone( ) and fetchall( ) function. 2

32. Explain any two aggregate function of SQL with suitable example. 2

33. Write the output of following python code 2

```
Text="Welcome Python"
L=len(Text)
ntext=""
for i in range (0,L):
   if Text[i].isupper():
      ntext=ntext+Text[i].lower()
   elif Text[i].isalpha():
      ntext=ntext+Text[i].upper()
   else:
      ntext=ntext+"!!"
print (ntext)
```

SECTION – II

34. Write a function in REP which accepts a list of integers and its size as arguments and replaces elements having even values with its half and elements having odd values with twice its value . 3

eg: if the list contains

3, 4, 5, 16, 9

then the function should rearranged list as

6, 2,10,8, 18

35. Write a method in python to read lines from a text file DIARY.TXT and display those lines which start with the alphabets P. 3

OR

Write a function countmy( ) in python to read the text file "mystory.txt" and count the number of times "my" occurs in the file. For example if the file mystory.txt contains:

"This is my school. I love to play and study in my school."

the countmy( ) function should display the output as:"my occurs 2 times".

36. Consider the following tables: COMPANY and MODEL. 3

Write the outputs of the SQL queries (a) to (c) based on the relations COMPANY and MODEL given below:

Table: COMPANY

CompID	**CompName**	**CompHQ**	**Contact Person**
1	Titan	Okhla	C.B. Ajit
2	Ajanta	Najafgarh	R. Mehta
3	Maxima	Shahdara	B. Kohli
4	Seiko	Okhla	R. Chadha
5	Ricoh	Shahdara	J. Kishore

Table: MODEL

Model_ID	**Comp_ID**	**Cost**	**DateOfManufacture**
T020	1	2000	2010-05-12
M032	4	7000	2009-04-15
M059	2	800	2009-09-23
A167	3	1200	2011-01-12
T024	1	`1300	2009-10-14

a) Select COUNT(DISTINCT CompHO) from Company;

b) Select CompName, 'Mr.', ContactPerson
from Company where CompName like '%a';

c) select Model_ID, Comp_ID, Cost, CompName, ContactPerson
from Model, Company
where Model.Comp_ID = Company.Comp_ID
and Comp_ID > 2;

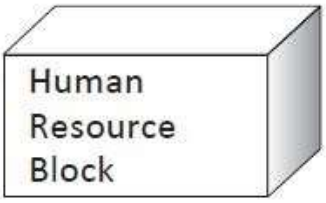
37. Write a function DELQ(Customer) in Python to delete a Customer from a Queue implemented using list. 3

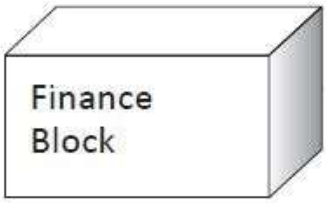
OR

Write a function POP(Book) in Python to delete a Book from a list of Book titles, considering it to act as a pop operation of the Stack data structure.

SECTION - III

38. ABC CONSULTANTS is a professional consultancy company. The company is planning to set up new offices in India with its hub at Gurugram. As a network adviser, you have to understand their requirements and suggest to them the best available solutions.





Block-to-Block distance (in Mtrs.):

Block (From)	Block (To)	Distance
Human Resources	Conference	60
Human Resources	Finance	60
Conference	Finance	120

Expected Number of Computers to be installed in each block:

Block	Computers
Human Resources	125
Conference	25
Finance	60

(a) What will be the most appropriate block where organization should plan to install their server? 1

(b) Draw a block-to-block cable layout to connect all the buildings in the most appropriate manner for efficient communication. 1

(c) What will be the best possible connectivity out of the following to connect the new set-up of offices in Dehradun with its London base office? 1

(i) Infrared (ii) Satellite Link (iii) Ethernet Cable

(d) Which of the following devices will you suggest to connect each computer in each of the above buildings? 1

(i) Gateway (ii) Switch (iii) Modem

(e) Write names of any **two** popular Open Source Software which are used as Operating Systems. 1

39. Write SQL commands for (i) to (v) on the basis of relations given below:

Table: **BOOKS**

book_id	Book_name	author_name	Publishers	Price	Type	qty
L01	Let us C	Sanjay Mukharjee	EPB	450	Comp	15
L02	Genuine	J. Mukhi	FIRST PUBL.	755	Fiction	24
L04	Mastering C++	Kantkar	EPB	165	Comp	60
L03	VC++ advance	P. Purohit	TDH	250	Comp	45
L05	Programming with Python	Sanjeev	FIRST PUBL.	350	Fiction	30

Table: ISSUED

Book_ID	Qty_Issued
L02	13
L04	5
L05	21

(i) To show the books of FIRST PUBL. Publishers written by P. Purohit. 1

(ii) To display cost of all the books published for EPB. 1

(iii) Depreciate the price of all books of EPB publishers by 5%. 1

(iv) To display the BOOK_NAME and price of the books, more than 5 copies of which have been issued. 1

(v) To show total cost of books of each type. 1

40. Write a python program to append a new records in a binary file –“student.dat”. The record can have Rollno, Name and Marks. 5

OR

Write a python program to search and display the record of the student from a binary file “Student.dat” containing students records (Rollno, Name and Marks). Roll number of the student to be searched will be entered by the user.

KENDRIYA VIDYALAYA SANGATHAN MUMBAI REGION (NASIK CLUSTER)

FIRST PRE-BOARD EXAMINATION 2020 – 21

CLASS: XII

SUBJECT: 083 – COMPUTER SCIENCE

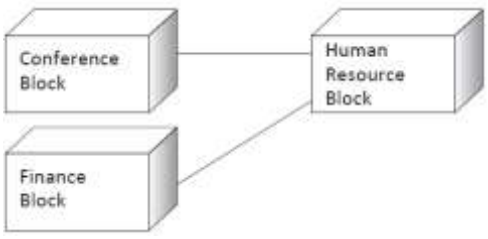
DURATION: 3 HRS. **MAX. MARKS: 70**

MARKING SCHEME

	Part – A Section-I	
1.	d) 7 Sisters	1
2.	a) local	1
3.	c) [0.0, 0.5, 1.0, 1.5]	1
4.	c) Lists are immutable while strings are mutable.	1
5.	c) 'sdneirF olleH'	1
6.	c) dump ( )	1
7.	b) T[2] = -29	1
8.	a) 1 2 3	1
9.	a) X is now: 50	1
10.	c) fob.readline( )	1
11.	b) Transmission Control Protocol / Internet Protocol	1
12.	c) Ransomware	1
13.	b) BETWEEN	1
14.	d) 50000	1
15.	a) MAX ( )	1
16.	HAVING Clause	1
17.	Bus Topology	1
18.	SELECT COUNT (*) FROM EMP;	1
19.	Voice over Internet Protocol	1
20.	SHOW DATABASES;	1
21.	Dynamic Host Configuration Protocol	1
	Section-II	
22.	a) Ecode b) Degree: 4, Cardinality: 5 c) Insert into HRDATA (Ecode, Ename, Remn) VALUES (80015, “Allen”, 43000) d) DELETE FROM HRDATA WHERE ENAME LIKE “Jeevan”; e) UPDATE HRDATA SET REMN = REMN * 1.10;	1 1 1 1 1
23.	(a) csv. (b) “r”? (c) data = csv.reader(f) (d) f.close()	1 1 1 1

	(e) Comma Separated Values	1
24.	a) 11 b) True	1 1
25.	Wi-Fi: 1. It allows an electronic device to exchange data or connect to the internet wirelessly using microwaves. 2. Network range of Wi-Fi is much less than other network technologies like wired LAN. OR 1. Optical fibre cable guarantees secure transmission and a very high transmission capacity. 2. Optical fibre cable is immune to electrical and magnetic interference.	2
26.	a) GSM: Global System for Mobile Communication b) POP: Post Office Protocol c) JSP: Java Server Pages d) CDMA: Code Division Multiple Access	2
27.	In PYTHON, **module** is a file consisting of **Python** code. A **module** can define functions, classes and variables. A **module** can also include runnable code. Functions of Math Module: **ceil(x): Returns the smallest integer greater than or equal to x.** **floor(x): Returns the largest integer less than or equal to x.** **OR** **Positional Arguments:** Arguments that are required to be passed to the function according to their position in the function header. If the sequence is changed, the result will be changes and if number of arguments are mismatched, error message will be shown. Example: def divi(a, b): print (a / b) >>> divi(10, 2) 5.0 >>> divi (20 / 10) 2.0 >>> divi (10) Error **Default Argument**: An argument that is assigned a value in the function header itself during the function definition. When such function is called without such argument, this assigned value is used as default value and function does its processing with this value. def divi(a, b = 1): print (a / b) >>> divi(10, 2)	2

	5.0 >>> divi(10) 10.0	
28.	Correct Code: **Num = int(input("Number:"))** s=0 **for i in range(1,Num,3) :** s+=1 **if i%2==0:** print(i*2) **else:** print(i*3) print (s)	2
29.	(i) INDIGO&BLUE&GREEN& Minimum Value of End = 3 Maximum Value of End = 4	2
30.	Attributes / Field: Columns of the table (Relation) is called as attributes. Tuple: Rows of the table (relation) is called as a tuple (record)	2
31.	**fetchone()** − It fetches the next row of a query result set. A result set is an object that is returned when a cursor object is used to query a table. **fetchall()** − It fetches all the rows in a result set. If some rows have already been extracted from the result set, then it retrieves the remaining rows from the result set.	2
32.	SUM() : Returns sum of the values of the selected column MAX() : Returns the largest values from the selected column	2
33.	Output: wELCOME!!pYTHON	2
34.	def REP (L, n): for i in range(n): if L[i] % 2 == 0: L[i] /= 2 else: L[i] *= 2 print (L)	3
35.	def display (): file = open("DIARY.txt" , "r") lines = file.readlines() for l in lines: if l[0]== "p" or l[0] == "P": print(l) file.close() OR	3

	def countmy (): f = open("mystory.txt", "r") count = 0 x = f.read() word = x.split() for i in word: if i == "my": count = count + 1 print ("my occurs", count, "times")	
36.	a) 3 b) Ajanta Mr. R. Mehta Maxima Mr. B. Kohli c) M032 4 7000 Seiko R. Chadha A167 3 1200 Maxima B. Kohli	1 1 1
37.	def DELQ(queue): if (queue == []): print (“Queue is empty…..”) else: print(“Deleted element is”, queue[0]) del queue[0] OR def POP(Book): if (Book ==[]): print(“Stack empty”) else: print(“Deleted element :”) Book.pop()	3
	SECTION – III	
38.	a) Human Resource b)  c) Ethernet Cable (d) Switch (e) Linux, Ubuntu, Open Solaris or any other Open Source O/s	1 1 1 1 1
39.	i) SELECT * FROM BOOKS WHERE PUBLISHER LIKE ‘FIRST PUBL.’ AND AUTHOR_NAME LIKE ‘P. Purohit’;	1

	ii) Select Price from Books where PUBLISHER LIKE ‘EPB’; iii) UPDATE BOOKS SET PRICE = PRICE * 0.90 WHERE PUBLISHER LIKE ‘EPB’; iv) SELECT BOOK_NAME, PRICE FROM BOOKS B, ISSUED I WHERE B.BOOK_ID = I.BOOK_ID AND QTY_ISSUED > 5; v) SELECT SUM(PRICE) FROM BOOKS GROUP BY TYPE;	
40.	import pickle record = [] while True: rollno = int(input("Enter your rollno: ")) name = input("Enter your name: ") marks = int(input("enter your marks obtained: ")) data = [rollno, name, marks] record.append(data) choice = input("Do you want to enter more records: ") if choice.upper() == "N": break; f1 = open("E:\Student.dat", "wb") pickle.dump(record, f1) print ("Records added....") f1.close() OR import pickle f1 = open("E:\Student.dat", "rb") Stud_rec = pickle.load(f1) rno = int(input(“Enter the roll no to search: ”)) flag = 0 for r in Stud_rec: if rno == r[0]: print (rollno, name, marks) flag = 1 if flag == 0: print(“Record not found…”) f1.close()	5

KENDRIYA VIDYALAYA SANGATHAN, RAIPUR REGION
FIRST PREBOARD EXAM, SESSION: 2020-21
Class: XII
Subject: Computer Science (083)

Maximum Marks:70 **Time Allowed: 3hours**

General Instructions:

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

Q.NO	**Section-I** **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	**Marks Allotted**
1	Which of the following is valid relational operator in Python: ? (i)**//** (ii)**?** (iii)**<** (iv)**and**	1
2	Given the lists L=[1,3,6,82,5,7,11,92] , write the output of print(L[2:5])	1
3	Which module is used for working with CSV files in Python?	1
4	Identify the valid declaration of L: L = [1, 23, 'hi', 6] (i)list (ii)dictionary (iii)array (iv)tuple	1
5	Suppose list L is declared as L = [0.5 * i for i in range (0,4)], list L is a) [0,1,2,3] b) [0,1,2,3,4] c) [0.0,0.5,1.0,1.5] d) [0.0,0.5,1.0,1.5,2.0]	1
6	Write a statement in Python to declare a dictionary whose keys are 'Jan', 'Feb', 'Mar' and values are 31, 28 and 31 respectively.	1
7	A list is declared as L=[(2,5,6,9,8)] What will be the value of print(L[0])?	1
8	A function definition in python begins with which keyword?	1
9	Name the protocol that is used for the transfer of hypertext content over the web.	1
10	In a Multi-National company Mr. A steals Mr. B's intellectual work and representing it as A's own work without citing the source of information, which kind of act this activity be termed as?	1
11	In SQL, name of the keyword used to display unique values of an attribute.	1
12	In SQL, what is the use of ORDER BY clause ?	1

13	Write the function used in SQL to display current date.	1
14	Which of the following is a DML command? a) CREATE b)ALTER c) INSERT d) DROP	1
15	Give at least two names for Guided and Unguided Transmission Media in networking.	1
16	What will be the output when the following code is executed >>> str1 = “helloworld” >>> str1[: -1] a. 'dlrowolleh' b.‘hello’ c.‘world’ d.'helloworl'	1
17	If the following code is executed, what will be the output of the following code? name="Kendriya Vidyalaya Class 12" print(name[9:15])	1
18	In SQL, write the command / query to display the structure of table ‘emp’ stored in a database.	1
19	Write the expanded form of Wi-Fi and GSM.	1
20	Which of the following type of column constraints will allow the entry of unique and not null values in the column? a) Unique b) Distinct c) Primary Key d) NULL	1
21	Rearrange the following terms in increasing order of data transfer rates. Gbps, Mbps, Tbps, Kbps, bps	1

Section-II

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

22 A Medical store “Lifeline” is planning to maintain their inventory using SQL to store the data. A database administer has decided that:

- Name of the database -medstore
- Name of the table –MEDICINE
- The column of MEDICINE table are as follows:
  - ino - integer
  - iname – character of size 15
  - mcode - integer
  - qty – integer

ino	iname	mcode	qty
1001	Surgical Mask	22	60
1002	Sanitizer	22	50
1003	Paracetamol	21	150
1005	Fast Relief gel	23	250
1006	Dettol	22	220
2004	Cough syrup	24	110
2009	Hand gloves	22	180

	(a) Identify the attribute best suitable to be declared as a primary key,	1
	(b) If Administrator adds two more attributes in the table MEDICINE then what will be the degree and cardinality of the table MEDICINE.	1
	(c) Administrator wants to update the content of the row whose ino is 1003 as , iname = "Paracetamol Tablet " mcode = 25 and qty = 100	1
	(d) Administrator wants to remove the table MEDICINE from the database medstore . Which command will he use from the following: a) DELETE FROM store; b) DROP TABLE MEDICINE; c) DROP DATABASE medstore; d) DELETE MEDICINE FROM medstore;	1
	(e) Now Administrator wants to display only unique code of the table MEDICINE . Write the query to display the same	1
23	Ranjan Kumar of class 12 is writing a program to create a CSV file "user.csv" which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task. import_____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file f=open('user.csv','____') # Line2 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._____ # Line4 addCsvFile("Arjun","123@45) addCsvFile("Arunima","aru@ma") addCsvFile("Frieda","myname@FRD") readCsvFile( ) # Line5	
	a) Name the module he should import in Line 1 b) In which mode, Ranjan should open the file to add data into the file c) Fill in the blank in Line 3 to read the data from a csv file. d) Fill in the blank in Line 4 to close the file. e) Write the output he will obtain while executing Line 5	1 1 1 1 1

	Part B **Section-I**	
24	Evaluate the following expressions: a) 6 * 3 + 4**2 // 5 – 8 b) 10 > 5 and 7 > 12 or not 18 > 3	2
25	Differentiate between Virus and Trojan Horse in context of networking and data communication threats. OR Differentiate between Web hosting and web browser. Write any two popular web browsers.	2
26	Expand the following terms: a. SMTP b. XML c. MAN d. FTP	2
27	Differentiate between actual parameter(s) and a formal parameter(s) with a suitable example for each. **OR** Write the difference between Global Variable and Local Variable	2
28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. DEF execmain(): x = int(input("Enter a number:")) if (abs(x) = x): print"You entered a positive number" else: x=*-1 print("Number made positive :",x) execmain()	2
29	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? import random X= random.random() Y= random.randint(0,4) print(int(),":",Y+int(X)) (i) 0:5 (ii) 0:3 (iii) 0:0 (iv) 2:5	2
30	Define Candidate Key and Alternate Key with suitable examples from a table containing some meaningful data.	2
31	Differentiate between *fetchone()* and *fetchall()* methods with suitable examples for each.	2
32	Write the full forms of TCL and DDL. Write any two commands of DDL in SQL.	2

33	Find and write the output of the following Python code: def mainu(): Moves=[11, 22, 33, 44] Queen=Moves Moves[2]+=22 L=len(Moves) for i in range (L): print("Now@", Queen[L-i-1], "#", Moves [i]) mainu()	2
	Section- II	
34	Write a function copylist(lst1,lst2) in Python, which accepts two list Lst1 and Lst2 of numbers and copies the common numbers into third list. Sample Input Data of the list lst1 = [10,20,30,40,12,11] lst2 = [10,30,40,13,15,76] Output [10,30,40]	3
35	Write a method/function ISTOUPCOUNT() in python to read contents from a text file WRITER.TXT, to count and display the occurrence of the word ‘‘IS’’ or ‘‘TO’’ or ‘‘UP’’. **For example** : If the content of the file is- IT IS UP TO US TO TAKE CARE OF OUR SURROUNDING. IT IS NOT POSSIBLE ONLY FOR THE GOVERNMENT TO TAKE RESPONSIBILITY The method/function should display Count of IS TO and UP is 6 **OR** Write a function AMCount() in Python, which should read each character of a text file STORY.TXT, should count and display the occurrence of alphabets A and M (including small cases a and m too). Example: If the file content is as follows: Updated information As simplified by official websites. The AMCount() function should display the output as: A or a:4	3

M or m :2

36	Write the outputs of the SQL queries (i) to (iii) based on the relations Stationery and Consumer given below:		3

Table Name : **Stationery**

S_ID	StationeryName	Company	Price	StockDate
DP01	Dot Pen	ABC	10	2011-03-31
PL02	Pencil	XYZ	6	2010-01-01
ER05	Eraser	XYZ	7	2010-02-14
PL01	Pencil	CAM	5	2009-01-09
GP02	Gel Pen	ABC	15	2009-03-19

Table Name: **Consumer**

C_ID	ConsumerName	Address	P_ID
01	Good Learner	Delhi	PL01
06	Write Well	Mumbai	GP02
12	Topper	Delhi	DP01
15	Write & Draw	Delhi	PL02
16	Motivation	Bengaluru	PL01

i. SELECT count(DISTINCT Address) FROM Consumer;

ii. SELECT Max(StockDate),Min(StockDate) FROMStationery;

iii. SELECT Stationery.StationeryName,Stationery.Company, Consumer.ConsumerName, Consumer.Address FROM Stationery, Consumer WHERE Stationery.S_ID = Consumer.P_ID AND Consumer.Address =”Delhi”;

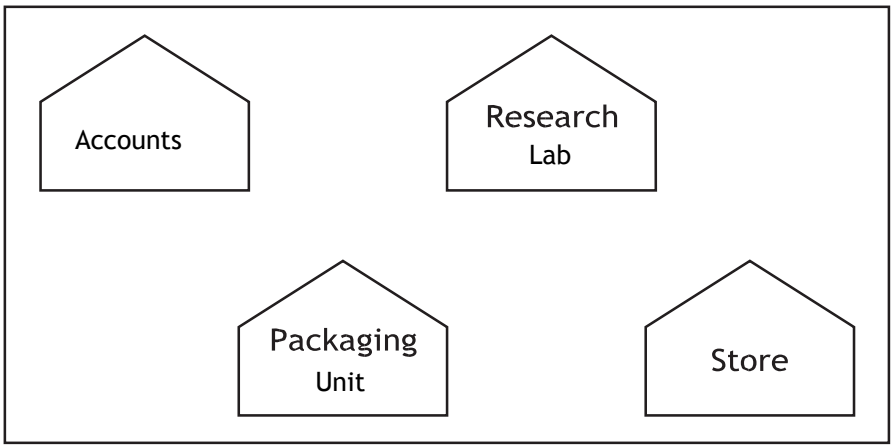
37 Write a function in Python PushBook(Book) to add a new book entry as book_no and book_title in the list of Books , considering it to act as push operations of the Stack data structure. 3

OR

Write a function in Python PopBook(Book), where Book is a stack implemented by a list of books. The function returns the value deleted from the stack.

Section- III

38 Riana Medicos Centre has set up its new centre in Dubai. It has four buildings as shown in the diagram given below: 5



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

Building	No. of Computer
Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

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

i. Suggest the type of network established between the buildings.
ii. Suggest the most suitable place (*i.e.*, building) to house the server of this organization.
iii. Suggest the placement of the Repeater in the network with justification.
iv. 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.
v. Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

39 Write SQL commands for the following queries (i) to (v) based on the relations Vehicle and Travel given below. 5

Table :**Travel**

NO	NAME	TDATE	KM	CODE	NOP
101	Janish Kin	2015-11-13	200	101	32
103	Vedika Sahai	2016-04-21	100	103	45
105	Tarun Ram	2016-03-23	350	102	42
102	John Fen	2016-02-13	90	102	40
107	Ahmed Khan	2015-01-10	75	104	2
104	Raveena	2016-05-28	80	105	4

Table : **Vehicle**

CODE	**VTYPE**	**PERKM**
101	VOLVO BUS	160
102	AC DELUXE BUS	150
103	ORDINARY BUS	90
105	SUV	40
104	CAR	20

i. To display NO, NAME, TDATE from the table Travel in descending order of NO.
ii. To display the NAME of all the travelers from the table Travel who are travelling by vehicle with code 101 or 102.
iii. To display the NO and NAME of those travelers from the table Travel who travelled between '2015-12-31' and '2016-04-01'.
iv. To display the CODE,NAME,VTYPE from both the tables with distance travelled (km) less than 90 Km.
v. To display the NAME of those traveler whose name starts with the alphabet 'R'.

40 A binary file "student.dat" has structure [rollno, name, marks]. 5

i. Write a user defined function insertRec*()* to input data for a student and add to student.dat.

ii. Write a function searchRollNo*(r)* in Python which accepts the student's rollno as parameter and searches the record in the file "student.dat" and shows the details of student i.e. rollno, name and marks (if found) otherwise shows the message as 'No record found'.

OR

Write a function filter(oldfile, newfile) that copies all the lines of a text file "source.txt" onto "target.txt" except those lines which starts with "@" sign.

KENDRIYA VIDYALAYA SANGATHAN, RAIPUR REGION
FIRST PREBOARD EXAM, SESSION: 2020-21
Class: XII
Subject: Computer Science (083)
MARKING SCHEME

MaximumMarks:70 **Time Allowed: 3hours**

	Part – A **Section - I**	
1	iii) <	1
2	[6,82,5]	1
3	csv	1
4	i) List	1
5	c) [0.0,0.5,1.0,1.5]	1
6	Month={'Jan':31,'Feb':28,'Mar':31}	1
7	(2,5,6,9,8)	
8	def	1
9	HTTP	1
10	Plagiarism	1
11	DISTINCT	1
12	To display the values in sorted order	1
13	curdate()	1
14	c)INSERT	1
15	Guided Media: Twisted pair Cable, Coaxial Cable , Fiber Optic Cable Unguided Media: Microwave / Radio wave , Infrared, Satellite	1
16	d.'helloworl'	1
17	Vidyal	1
18	desc emp;	1
19	WiFi : Wireless Fidelity GSM : Global System for Mobile Communication	1
20	(c) Primary Key	1
21	Bps, Kbps, Mbps, Gbps, Tbps	1

	Part – A **Section - II**	
22	(a) ino (b) Degree= 6 Cardinality =7 (c) UPDATE MEDICINE set iname= 'Paracetamol Tablet',mcode=25, qty=100 where ino = 1003 ; (d) DROP TABLEMEDICINE; (e) Select distinct mcode from MEDICINE;	1 1 1 1 1
23	(a) Line 1 : csv (b) Line 2 : a (c) Line 3 :reader (d) Line 4 :close() (e) Line 5 : Arjun 123@456 Arunima aru@nima Frieda myname@FRD	1 1 1 1 1

	Part – B	
24	a) 13 b) False	2
25	Viruses require an active host program or an already-infected and active operating system in order for viruses to run, cause damage and infect other executable files or documents Worms are stand-alone malicious programs that can self-replicate. Trojen Horse: It is any malware which misleads user to its true intent and causes damage in system and it steal the data also. **OR** **Web Browser** : A web browser is a software application for accessing information on the World Wide Web. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device. **Web Hosting**: Web hosting is a means of hosting web server applications on a computer system through which electronic content on the internet is readily available to any web-browser client. Popular web browsers : Google Chrome, Mozilla Firefox, Internet Explorer etc	2
26	a. SMTP - Simple Mail TransferProtocol b. XML - eXtensible MarkupLanguage c. MAN – Metropolitan AreaNetwork d. FTP – File Transfer Protocol (1/2 marks for each correct answer)	2
27	The list of identifiers used in a function call is called actual parameter(s) whereas the list of parameters used in the function definition is called formal parameter(s). Actual parameter may be value / variable or expression. Formal parameter is an identifier. Example: def area(side): # line 1 returnside*side; print(area(5)) # line 2 In line 1, side is the formal parameter and in line 2, while invoking area() function, the value 5 is the actual parameter.	2

	A formal parameter, i.e. a parameter, is in the *function definition*. An actual parameter, i.e. an argument, is in a *function call*. **OR** Local Variable / Global Variable It is a variable which is declared within a function or within a block / It is variable which declared outside all the function . It is accessible only within a function /block of a program / It is accessible throughout the program in which it is declared.	
28	**CORRECTED CODE:** def execmain(): # error 1 x = int(input("Enter a number:")) if (abs(x)== x): # error 2 print("You entered a positive number") # error 3 else: x*=-1 # error 4 print("Number made positive:", x) execmain() (1/2 mark for each)	2
29	OUTPUT: (ii) and (iii)	2
30	A table may have more than one such attribute/group of attributes that identifies a tuple uniquely, all such attribute(s) are known as Candidate Keys. All the candidate key except primary key are called Alternate key. Table: Employee (**empno**, aadhar_no, voter_id, ename, deptno, sal, city) In the above table Employee, empno,aadhar_no, voter_id all are candidate key If we define empno as primary key then remaining candidate keys will be alternate key. (1 mark for correct definition) (1 mark for example	2

31	fetchall() fetches all the rows of a query result. An empty list is returned if there is no record to fetch the cursor. fetchone() method returns one row or a single record at a time. It will return None if no more rows / records are available. Any example.	2
32	TCL – Transaction Control Language DDL – Data Definition Language Any two out of CREATE, DROP, ALTER	2
33	OUTPUT: Now@ 44 # 11 Now@ 55 # 22 Now@ 22 # 55 Now@ 11 # 44	2
34	def copylist(lst1,lst2): c = [ ] for i in lst1: for j in lst2: if i==j and i not in c: c.append(i) print(c) 1 mark for correct header 1 mark for correct logic 1 mark for correct output **Note : Using of any correct code giving the same result is also accepted.**	3
35	def ISTOUPCOUNT(): c=0 file=open('sample.txt','r') line = file.read() word = line.split() cnt=0 for w in word: if w=='TO' or w=='UP' or w=='IS': cnt+=1 print(cnt) file.close() ½ Mark for correct header. ½ Mark for correct output ½ Mark for correct closing $1^{1/2}$ Marks for correct logic **OR** def AMcount(): f=open("story.txt","r") A,M=0,0	3

```
r=f.read()
for x inr:
   if x[0]=="A" or x[0]=="a" :
      A=A+1
   elif x[0]=="M" or x[0]=="m":
      M=M+1
f.close()
print("A or a: ",A)
print("M or m: ",M)
```

½ Mark for correct header.
½ Mark for correct output
½ Mark for correct closing
$1^{1/2}$ Marks for correct logic

Note : Using of any correct code giving the same result is also accepted.

36 **OUTPUT:** 3

i.
Address
Delhi
Mumbai
Bengaluru

ii. Max - 2011-03-31 Min- 2009-01-09

iii.

DP01	DotPen	ABC	Topper	Delhi
PL02	Pencil	XYX	Write & Draw	Delhi
PL01	Pencil	CAM	Motivation	Delhi
PL01	Pencil	CAM	Good Learner	Delhi

(1 mark for each correct answer)

37	def PushBook(Book): bno = input("enter book no : ") btitle = input("enter book title:") rec = bno + " " + btitle Book.append(rec) print(Book) **OR** def PopBook(Book) : # If stack is empty if len(Book)==0: print("Underflow") else: print("Deleted entry :", Book.pop()) ½ marks for correct header 1½ marks for correct logic ½ mark for proper use of append or pop function ½ mark for correct output	
38	i. Local Area Network ii. Research Lab as it has the maximum number of computers. iii. **Repeater** should be placed between Accounts and Packaging Unit, Accounts to Research Lab, Store to Research Lab and Accounts to Packaging Unit. iv. **Switch** should be placed in each of the buildings for better traffic management v. **Firewall**. (1 mark for each correct answer**)**	5
39	i. SELECT NO,NAME,TDATE from Travel ORDER BY NO DESC; ii. SELECT NAME from Travel WHERE CODE = 101 OR CODE= 102; iii. SELECT NO, NAME from Travel WHERE TDATE BETWEEN '2015-12-31' AND '2016-04-01'; iv. SELECT A.CODE, NAME, VTYPE FROM Travel A, Vehicle B WHEREA.CODE=B.CODE AND KM<90; v. SELECT NAME from Travel WHERE NAME LIKE 'R%' ; **(1 mark for each correct answer)**	5

40	**ANSWER: (Using of any correct code giving the same result is also accepted.)**	5

```
import pickle
def insertRec():
    f=open("student.dat","ab")
    rollno = int (input("Enter Roll Number : "))
    name=input("Enter Name :")
    marks = int(input("Enter Marks : "))
    rec = { “Rollno”:rollno,”Name:name,”Marks”:marks }
    pickle.dump( rec, f )
    f.close()

 def searchRollNo( r ):
     f=open("student.dat","rb")
     flag = False
     while True:
           try:
                rec=pickle.load(f)

                if rec[‘Rollno’] == r :
                      print(“Rollno : “, rec[‘Rollno’])
                      print(“Name : ”, rec[‘Name’])
                      print(“Marks : ”, rec[‘Marks])
                      flag == True
          except EOFError:
                 break
     if flag == False:
          print(“No record Found”)
    f.close()
```

2 ½ marks for each function
½ mark for correct header
½ mark for correct closing
½ mark for correct output
1 mark for correct logic

OR

```
 def filter(oldfile, newfile):
     fin = open("oldfile","r")
     fout = open(“newfile”,”w”)

     while True:

          text= fin.readline()
          if len(text) ==0:
                break
          if text[0] == ‘@’:
                continue
```

	fout.write(text) fin.close() fout.close() filter(“source.txt”,”target.txt”) 1 mark for correct header ½ mark for correct closing 1 mark for correct output 2 marks for correct logic ½ mark correct closing	

Kendriya Vidyalaya Sangathan, Tinsukia Region
First Pre-Board Examination 2020-21
Computer Science (083) (Theory)
Class: XII

Maximum Marks: 70 **Time Allowed: 3 hours**

General Instructions:

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

Question No.	Part-A	Marks allocated
	Section-I **Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**	
1.	Find the valid identifier from the following a) `False` b) `Ist&2nd` c) `2ndName` d) `My_Name`	(1)
2.	Given the lists `L=[1,30,67,86,23,15,37,131,9232]` , write the output of `print(L[3:7])`	(1)
3.	Name all the file access modes in python.	(1)
4.	Identify the invalid logical operator in Python from the following. a) `and` b) `or` c) `not` d) `Boolean`	(1)
5.	Suppose a tuple T is declared as `T = (10, 12, 43, 39)`, which of the following is Incorrect? a) `print(T[1])`	(1)

	b) `print(max(T))` c) `print(len(T))` d) None of the above	
6.	Write a statement in Python to declare a dictionary whose keys are 5, 8, 10 and values are May, August and October respectively.	(1)
7.	A list is declared as `Lst = [1,2,3,4,5,6,8]` What will be the value of `sum(Lst)`?	(1)
8.	Name the built-in function / method that is used to return the length of the object.	(1)
9.	Name the protocol that is used to transfer files.	(1)
10.	Your friend's mother receives an e-mail to access the additional services of bank at zero cost from some agency asking her to fill her bank details like credit card number and PIN in the form attached to the mail. Identify the type of cybercrime in this situation.	(1)
11.	In SQL, name the clause that is used to display the unique values of an attribute of a table.	(1)
12.	In SQL, what is the use of <> operator?	(1)
13.	Write any two aggregate function used in SQL.	(1)
14.	Which of the following is/ are DML command(s)? a) SELECT b) ALTER c) DROP d) UPDATE	(1)
15.	Name the fastest available transmission media.	(1)
16.	Identify the valid declaration of L: `L = ('Mon', '23', 'hello', '60.5')` a. dictionary b. string c. tuple d. list	(1)
17.	If the following code is executed, what will be the output of the following code? `name="Computer_Science_with_Python"` `print(name[-25:10])`	(1)
18.	In SQL, write the query to display the list databases.	(1)
19.	Write the expanded form of LAN & MAN.	(1)
20.	Which of the following types of table constraints will not prevent NULL entries in a table? a) Unique b) Distinct c) Primary Key d) NOT NULL	(1)
21.	Rearrange the following transmission media in increasing order of data transfer rates. UTP CAT - 5 , UTP CAT – 6, IR, Bluetooth, OFC	(1)
	Section-II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	

22. A local library OurLib is considering to maintain their inventory using SQL to store the data. As a database administer, Nishita has decided that :

- Name of the database - OurLib
- Name of the table - BOOKS
- The attributes of Table **BOOKS** are as follows:
  Book_ID - numeric
  Title – character of size 30
  Author - character of size 20
  Publisher – character of size 30
  Price – Float

Book_ID	**Title**	**Author**	**Publisher**	**Price**
1001	The Leader who had no title	Robin Sharma	PHI	500
1002	You Can Win	Shiv Kheda	TMH	253
1003	Rich Dad Poor Dad	Robert T. Kiyosaki	PHI	564
1004	Success Through a Positive Mental Attitude	Napoleon Hill	Penguin	522
1005	Fear Not, Dream Big, & Execute	Jeff Meyer	MCH	845
1006	Leadership: The Art of Inspiring People to Be Their Best	Craig B. Whelden	Penguin	542

a. Identify the attribute best suitable to be declared as a primary key. (1)

b. Write the degree and cardinality of the table **BOOKS**. (1)

c. Insert the following data into the table **BOOKS**. (1)
Book_ID= 2010, Title= "A Book of Comp. Sc.", Author= "Praveen Sharma" and Price = 625

d. Nishita want to remove the entire data of table BOOKS from the database OurLib. (1)
Which command will he use from the following:
   i. DELETE FROM BOOKS;
   ii. DROP TABLE BOOKS;
   iii. DROP DATABASE BOOKS;
   iv. DELETE TABLE books FROM OurLib;

e. Now Nishita wants to display the structure of the table BOOKS, i.e. Title of the attributes and their respective data types that she has used in the table. Write the query to display the same. (1)

23. Sanjay Dalmia of class 12 is writing a program to create a CSV file "contacts.csv" which will contain Name and Mobile Number for some

	entries. He has written the following code. As a programmer, help him to successfully execute the given task. `import _____` # Line 1 `def addCsvFile(Name,Mobile):` # to write / add data into the CSV file `f=open(' contacts.csv','____')` # Line 2 `newFileWriter = csv.writer(f)` `newFileWriter.writerow([Name,Mobile])` `f.close()` #csv file reading code `def readCsvFile():` # to read data from CSV file `with open(' contacts.csv','r') as newFile:` `newFileReader = csv._____(newFile)` # Line 3 `for row in newFileReader:` `print (row[0],row[1])` `newFile._____` # Line 4 `addCsvFile("Arjun","8548587526")` `addCsvFile("Arunima","6585425855")` `addCsvFile("Frieda","8752556320")` `readCsvFile()` #Line 5	
	a) Name the module he should import in Line 1.	(1)
	b) In which mode, Sanjay should open the file to add data into the file	(1)
	c) Fill in the blank in Line 3 to read the data from a csv file.	(1)
	d) Fill in the blank in Line 4 to close the file.	(1)
	e) Write the output he will obtain while executing Line 5.	(1)
	Part – B	
	Section-I	
24.	Evaluate the following expressions: a) `8/4+4**2//5%2-8` b) `10 >= 5 and 7 < 12 or not 13 == 3`	(2)
25.	Differentiate between Switch and a Hub. OR Differentiate between Web server and web browser. Write any two popular web browsers.	(2)
26.	Expand the following terms: a. URL b. Wi-Fi c. LAN d. GPRS	(2)
27.	Differentiate between break and continue statements with a suitable example.	(2)

	OR What is the difference between local and a global variable? Explain with the help of a suitable example.	
28.	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. `a = 200` `b = 33` `if b > a` `  Print("b is greater than a")` `elseif  a == b:` `  print(a and b are equal)` `else:` `  print("a is greater than b")`	(2)
29.	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables first, second and third. `from random import randint` `LST=[5,10,15,20,25,30,35,40,45,50,60,70]` `first = randint(3,8)` `second = randint(4,9)` `third = randint(6,11)` `print(LST[first],"#", LST[second],"#", LST[third],"#")` (i) 20#25#25# (ii) 30#40#70# (iii) 15#60#70# (iv) 35#40#60#	(2)
30.	What do you understand by Candidate Keys in a table? Give a suitable example of Candidate Keys from a table containing some meaningful data.	(2)
31.	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	(2)
32.	Write the full forms of DDL and DML. Write any two commands of DML in SQL.	(2)
33.	Find and write the output of the following Python code: `def change (P,Q=30):` `  P=P+Q` `  Q=Q-P` `  print(P,"#",Q)` `  return(P)` `R=150` `S=100` `R=change(R,S)` `print(R,"#",S)` `S=change(S)`	(2)

Section- II

34. Take the two lists, and write a program that returns a list only the elements that are common between both the lists (without duplicates) in ascending order. Make sure your program works on two lists of different sizes. (3)

e.g.
L1= [1,1,2,3,5,8,13,21,34,55,89]

L2= [20,1,2,3,4,5,6,7,8,9,10,11,12,13]

The output should be:

[1,2,3,5,8,13]

35. Write a function in Python that counts the number of "The" or "This" words present in a text file "MY_TEXT_FILE.TXT". (3)

Note: (The comparison should be case insensitive)

OR

Write a function VowelCount() in Python, which should read each character of a text file MY_TEXT_FILE.TXT, should count and display the occurrence of alphabets vowels.

Example:
If the file content is as follows:

Updated information

As simplified by official websites.

The VowelCount() function should display the output as:

A or a:4
E or e :4
I or I :8
O or o : 0
U or u: 1

36. Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below: (3)

Table: Stationary

S_ID	StationaryName	Company	Price
DP01	Dot Pen	ABC	10
PL02	Pencil	XYZ	6
ER05	Eraser	XYZ	7
PL01	Pencil	CAM	5
GP02	Gel Pen	ABC	15

Table: Consumer

C_ID	ConsumerName	Address	S_ID
1	Good Learner	Delhi	PL01
6	Write Well	Mumbai	GP02
12	Topper	Delhi	DP01
15	Write & Draw	Delhi	PL02

i. SELECT count(DISTINCT Address) FROM Consumer;

ii. SELECT Company, MAX(Price), MIN(Price), COUNT(*) from Stationary GROUP BY Company;

iii. SELECT Consumer.ConsumerName, Stationary.StationaryName, Stationary.Price FROM Stationary, Consumer WHERE Consumer.S_ID = Stationary.S_ID;

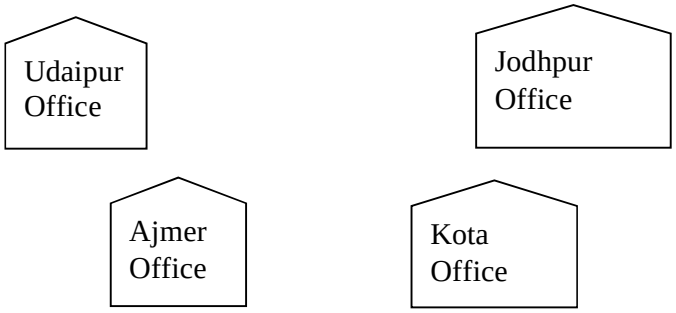
37. Write a function in Python PUSH (Lst), where Lst is a list of numbers. From this list push all numbers not divisible by 6 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. (3)

OR

Write a function in Python POP(Lst), where Lst is a stack implemented by a list of numbers. The function returns the value deleted from the stack.

Section-III

38. Laxmi Marketing Ltd. has four branches in its campus named Udaipur, Kota, Jodhpur and Ajmer. Laxmi Marketing Ltd. wants to establish the networking between all the four offices. A rough layout of the same is as follows: (5)



Approximate distances between these offices as per network survey team are as follows:

Place From	**Place To**	**Distance**
Udaipur	Jodhpur	30 m
Jodhpur	Kota	40 m
Kota	Ajmer	25 m
Udaipur	Ajmer	150 m
Jodhpur	Ajmer	105 m
Udaipur	Kota	60 m

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

Udaipur	40
Jodhpur	80
Kota	200
Ajmer	60

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

39. Consider the tables given below. (5)

Table : STOCK

Itcode	Itname	Dcode	Qty	UnitPrc	StkDate
444	Drawing Copy	101	10	21	31-June-2009
445	Sharpener Camlin	102	25	13	21-Apr-2010
450	Eraser Natraj	101	40	6	11-Dec-2010
452	Gel Pen Montex	103	80	10	03-Jan-2010
457	Geometry Box	101	65	65	15-Nov-2009
467	Parker Premium	102	40	109	27-Oct-2009
469	Office File	103	27	34	13-Sep-2010

Table : DEALERS

Dcode	Dname	Location
101	Vikash Stationers	Lanka Varanasi
102	Bharat Drawing Emporium	Luxa Varanasi
103	Banaras Books Corporation	Bansphatak Varanasi

(i) To display all the information about items containing the word "pen" in the field Itname in the table STOCK.
(ii) List all the itname sold by Vikash Stationers.
(iii) List all the Itname and StkDate in ascending order of StkDate.
(iv) List all the Itname, Qty and Dname for all the items for the items quantity more than 40.
(v) List all the details of the items for which UnitPrc is more than 10 and <= 50.

40. A binary file "Employee.dat" has structure [Emp_ID, Emp_Name, Salary, Mobile]. (5)

	i. Write a user defined function CreateFile() to input data for a record and add to Employee.dat . ii. Write a function TotalSalary() in Python which return the sum of salary of all the employees stored in the binary file "Employee.dat" **OR** A binary file "Account.dat" has structure (Acct_Number, Acct_Type, AcctHolderName, Balance). i. Write a user defined function CreateFile() to input data for a record and add to Account.dat . ii. Write a function CountBalanceAbove(BAL) in Python that would read contents of the file "Account.dat" and display the details of those accounts in which Balance is more than BAL. Also display number of such accounts.	

********** END**********

Kendriya Vidyalaya Sangathan, Tinsukia Region
First Pre-Board Examination 2020-21
Computer Science (083) (Theory)
Class: XII

Maximum Marks: 70 **Time Allowed: 3 hours**

Marking Scheme

Question No.	Part-A	Marks allocated
	Section-I	
	Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.	
1.	Find the valid identifier from the following a) `False` b) `Ist&2nd` c) `2ndName` d) `My_Name` **d) `My_Name`**	(1)
2.	Given the lists `L=[1,30,67,86,23,15,37,131,9232]` , write the output of `print(L[3:7])` **[86, 23, 15, 37]**	(1)
3.	Name all the file access modes in python. **" r ", for reading.** **" w ", for writing.** **" a ", for appending.** **" r+ ", for both reading and writing.**	(1)
4.	Identify the invalid logical operator in Python from the following. a) `and` b) `or` c) `not` d) `Boolean` **d) `Boolean`**	(1)
5.	Suppose a tuple T is declared as `T = (10, 12, 43, 39)`, which of the following is Incorrect? a) `print(T[1])` b) `print(max(T))` c) `print(len(T))` d) None of the above **d) None of the above**	(1)
6.	Write a statement in Python to declare a dictionary whose keys are 5, 8, 10 and values are May, August and October respectively. **Dict= {5:"May", 8: "August", 10: "October"}**	(1)
7.	A list is declared as `Lst = [1,2,3,4,5,6,8]` What will be the value of `sum(Lst)`? **29**	(1)

8. Name the built-in function / method that is used to return the length of the object. (1)

len()

9. Name the protocol that is used to transfer files. (1)

FTP

10. Your friend's mother receives an e-mail to access the additional services of bank at zero cost from some agency asking her to fill her bank details like credit card number and PIN in the form attached to the mail.
Identify the type of cybercrime in this situation. (1)

Phishing

11. In SQL, name the clause that is used to display the unique values of an attribute of a table. (1)

DISTINCT

12. In SQL, what is the use of <> operator? (1)

Not equal to

13. Write any two aggregate function used in SQL. (1)

Any two of aggregate functions (1/2 marks for each correct answer)

14. Which of the following is/ are DML command(s)? (1)

a) SELECT b) ALTER c) DROP d) UPDATE

SELECT & UPDATE (1/2 marks for each correct answer)

15. Name the fastest available transmission media. (1)

OFC (Optical Fiber Cable)

16. Identify the valid declaration of L: (1)

```
L = ('Mon', '23', 'hello', '60.5')
```

a. dictionary b. string c. tuple d. list

c. tuple

17. If the following code is executed, what will be the output of the following code? (1)

```
name="Computer_Science_with_Python"
print(name[-25:10])
```

puter_S

18. In SQL, write the query to display the list databases. (1)

SHOW DATABASES;

19. Write the expanded form of LAN & MAN. (1)

Local Area Network

Metropolitan Area Network (1/2 marks for each correct answer)

20. Which of the following types of table constraints will not prevent NULL entries in a table? (1)

a) Unique
b) Distinct
c) Primary Key
d) NOT NULL

UNIQUE & DISTINCT (1/2 marks for each correct answer)

21. Rearrange the following transmission media in increasing order of data transfer rates. (1)

UTP CAT - 5, UTP CAT – 6, IR, Bluetooth, OFC

IR, Bluetooth, UTP CAT - 5, UTP CAT – 6, OFC

Section-II

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

22. A local library OurLib is considering to maintain their inventory using SQL to store the data. As a database administer, Nishita has decided that :

- Name of the database - OurLib
- Name of the table - BOOKS
- The attributes of table **BOOKS** are as follows:
  Book_ID - numeric
  Title – character of size 30
  Author - character of size 20
  Publisher – character of size 30
  Price – Float

Book_ID	Title	Author	Publisher	Price
1001	The Leader who had no title	Robin Sharma	PHI	500
1002	You Can Win	Shiv Kheda	TMH	253
1003	Rich Dad Poor Dad	Robert T. Kiyosaki	PHI	564
1004	Success Through a Positive Mental Attitude	Napoleon Hill	Penguin	522
1005	Fear Not, Dream Big, & Execute	Jeff Meyer	MCH	845
1006	Leadership: The Art of Inspiring People to Be Their Best	Craig B. Whelden	Penguin	542

a. Identify the attribute best suitable to be declared as a primary key. (1)
BOOK_ID

b. Write the degree and cardinality of the table **BOOKS**. (1)
Degree: 5, Cardinality: 6

c. Insert the following data into the attributes **BOOKS**. (1)
Book_ID= 2010, Title= “A Book of Comp. Sc.”, Author=”Praveen Sharma” and Price = 625

INSERT INTO BOOKS
values(2010, “A Book of Comp. Sc.”, “Praveen Sharma”, 625);

d. Nishita want to remove the entire data of table BOOKS from the database OurLib. (1)
Which command will he use from the following:
   i. DELETE FROM BOOKS;
   ii. DROP TABLE BOOKS;
   iii. DROP DATABASE BOOKS;

iv. DELETE TABLE books FROM OurLib;

i. DELETE FROM BOOKS;

e. Now Nishita wants to display the structure of the table BOOKS, i.e. Title of the attributes and their respective data types that she has used in the table. Write the query to display the same. (1)

DESC BOOKS; OR
DESCRIBE BOOKS; (1 mark for any suitable output)

23. Sanjay Dalmia of class 12 is writing a program to create a CSV file "contacts.csv" which will contain Name and Mobile Number for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____                                    # Line 1

def addCsvFile(Name,Mobile): # to write / add data into the CSV file
    f=open('contacts.csv','_____')              # Line 2
    newFileWriter = csv.writer(f)
    newFileWriter.writerow([Name,Mobile])
    f.close()


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

addCsvFile("Arjun","8548587526")

addCsvFile("Arunima","6585425855")

addCsvFile("Frieda","8752556320")

readCsvFile()                                   #Line 5
```

a) Name the module he should import in Line 1. (1)
import csv

b) In which mode, Sanjay should open the file to add data into the file (1)
a or a+

c) Fill in the blank in Line 3 to read the data from a csv file. (1)
reader

d) Fill in the blank in Line 4 to close the file. (1)
close()

a) Write the output he will obtain while executing Line 5. (1)
Arjun 8548587526
Arunima 6585425855
Frieda 8752556320

Part – B

Section-I

24. Evaluate the following expressions: (2)

a) `8/4+4**2//5%2-8`

-5.0

b) `10 >= 5 and 7 < 12 or not 13 == 3`

True

25. Differentiate between Switch and a Hub. (2)

1 mark for each correct difference.

OR

Differentiate between Web server and web browser. Write any two popular web browsers.

1 mark for Differentiate between Web server and web browser

½ Mark for each web browser name

26. Expand the following terms: (2)

a. URL b. WI-Fi c. LAN d. GPRS

½ Mark for each correct expansion

Uniform Resource Locater.
Wireless – Fidelity
Local Area Network
General Packet Radio Service

27. Differentiate between *break* and *continue* statements with a suitable example. (2)

1 mark for correct example and explanation.

OR

What is the difference between local and a global variable? Explain with the help of a suitable example.

1 mark for difference and 1 mark for correct example.

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

```
a = 200
b = 33
if b > a:
     print("b is greater than a")
elif  a == b:
       print("a and b are equal")
else:
       print("a is greater than b")
```

½ mark for each error identification

29. What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables first, second and third. 2)

```
from random import randint
LST=[5,10,15,20,25,30,35,40,45,50,60,70]
first = randint(3,8)
second = randint(4,9)
third = randint(6,11)
print(first,"#",second,"#",third,"#")
```

(i) 20#25#25# (ii) 30#40#70# (iii) 15#60#70# (iv) 35#40#60#

1 mark for each correct response
35#40#60#
Maximum Values: First: 40, Second: 45, Third: 60

30. What do you understand by Candidate Keys in a table? Give a suitable example of Candidate Keys from a table containing some meaningful data. (2)
½ mark for candidate key explanation / definition
1½ mark for example

31. Differentiate between *fetchone()* and *fetchall()* methods with suitable examples for each. (2)
1 mark for each correct example

32. Write the full forms of DDL and DML. Write any two commands of DML in SQL. (2)
½ mark for each correct expansion
Data Definition Language, Data Manipulation Language
½ mark for each correct example

33. Find and write the output of the following Python code: (2)

```
def change (P,Q=30):
    P=P+Q
    Q=Q-P
    print(P,"#",Q)
    return(P)
R=150
S=100
R=change(R,S)
print(R,"#",S)
S=change(S)
```

250 # -150
250 # 100
130 # -100

Section- II

34. Take the two lists, and write a program that returns a list only the elements that are common between both the lists (without duplicates) in ascending order. Make sure your program works on two lists of different sizes. (3)

e.g.
L1= [1,1,2,3,5,8,13,21,34,55,89]
L2= [20,1,2,3,4,5,6,7,8,9,10,11,12,13]
The output should be:
[1,2,3,4,5,6,7,8,9,10,11,12,13,20,21,34,55,89]
3 marks for correct program, one possible code is below

```
L1= [1,1,2,3,5,8,13,21,34,55,89]
L2= [20,1,2,3,4,5,6,7,8,9,10,11,12,13]
L3=[]
temp_L1=list(set(L1))
temp_L2=list(set(L2))
for i in temp_L1:
   for j in range(len(temp_L2)):
      if i == temp_L2[j]:
         L3.append(i)
#L3=temp_L1+temp_L2
```

```
L3=list(set(L3))
L3.sort()
print(L3)
```

35. Write a function in Python that counts the number of “The” or “This” words present in a text file “MY_TEXT_FILE.TXT”. (3)

Note: (The comparison should be case insensitive)

```
num_words = 0
 with open('MY_TEXT_FILE.TXT', 'r') as f:
    for line in f:
       words = line.split()
       for word in words:
          if word.upper()== 'THE' or word.upper()== 'THIS' :
             num_words+=1
 print(num_words)
```

OR

Write a function VowelCount() in Python, which should read each character of a text file MY_TEXT_FILE.TXT, should count and display the occurrence of alphabets vowels.

Example:
If the file content is as

follows: Updated

information

As simplified by official websites.

The VowelCount() function should display the output as:

A or a:4
E or e :4
I or I :8
O or o : 0
U or u: 1

```
def VowelCount():
        count_a=count_e=count_i=count_o=count_u=0
        with open('MY_TEXT_FILE.TXT', 'r') as f:
           for line in f:
              for letter in line:
                 if letter.upper()=='A':
                    count_a+=1
                 elif letter.upper()=='E':
                    count_e+=1
                 elif letter.upper()=='I':
                    count_i+=1
                 elif letter.upper()=='O':
                    count_o+=1
                 elif letter.upper()=='U':
                    count_u+=1

        print("A or a:", count_a)
        print("E or e:", count_e)
```

```
print("I or i:", count_i)
print("O or o :", count_o)
print("U or u:", count_u)
```

or any other correct logic

36. Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below: (3)

Table: Stationary

S_ID	StationaryName	Company	Price
DP01	Dot Pen	ABC	10
PL02	Pencil	XYZ	6
ER05	Eraser	XYZ	7
PL01	Pencil	CAM	5
GP02	Gel Pen	ABC	15

Table: Consumer

C_ID	ConsumerName	Address	S_ID
1	Good Learner	Delhi	PL01
6	Write Well	Mumbai	GP02
12	Topper	Delhi	DP01
15	Write & Draw	Delhi	PL02

i. SELECT count(DISTINCT Address) FROM Consumer;
2

ii. SELECT Company, MAX(Price), MIN(Price), COUNT(*) from Stationary GROUP BY Company;

Company	Max(Price)	Min(Price)	Count(*)
ABC	**15**	**10**	**2**
XYZ	**7**	**6**	**2**
CAM	**5**	**5**	**1**

iii. SELECT Consumer.ConsumerName, Stationary.StationaryName, Stationary.Price
FROM Stationary, Consumer
WHERE Consumer.S_ID = Stationary.S_ID;

Good Learner	**Pencil**	**5**
Write Well	**Gel Pen**	**15**
Topper	**Dot Pen**	**10**
Write & Draw	**Pencil**	**6**

37. Write a function in Python PUSH(Lst), where Lst is a list of numbers. From this list push all numbers not divisible by 6 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. (3)

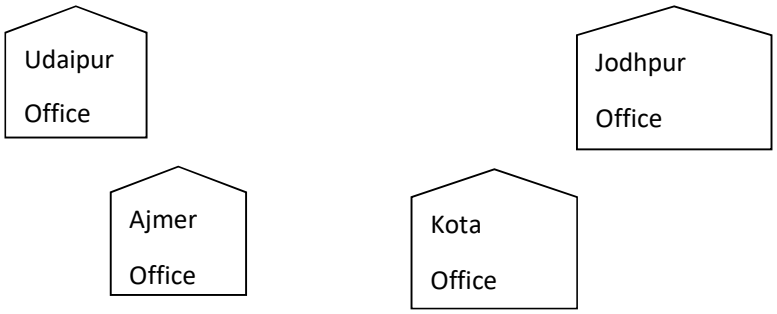
OR

Write a function in Python POP(Lst), where Lst is a stack implemented by a list of numbers. The function returns the value deleted from the stack.

3 marks for any correct logic

Section-III

38. Laxmi Marketing Ltd. has four branches in its campus named Udaipur, Kota, Jodhpur and Ajmer. Laxmi Marketing Ltd. wants to establish the networking between all the four offices. (5)



Approximate distances between these offices as per network survey team are as follows:

Place From	Place To	Distance
Udaipur	Jodhpur	30 m
Jodhpur	Kota	40 m
Kota	Ajmer	25 m
Udaipur	Ajmer	150 m
Jodhpur	Ajmer	105 m
Udaipur	Kota	60 m

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

Udaipur	40
Jodhpur	80
Kota	200
Ajmer	60

i. Suggest the most suitable place (i.e., Block/Center) to install the server of this organization with a suitable reason.

KOTA, Maximum Computers

ii. Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.

Any suitable layout

iii. Which device will you suggest to be placed/installed in each of these offices to efficiently connect all the computers within these offices?

Switch

iv. Suggest the placement of a Repeater in the network with justification.

Udaipur to Ajmer Block if direct connection is there

v. The organization is planning to connect its new office in Delhi, which is more than 1250 km current location. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer.

WAN: spread over more than one city

39. (5)

Consider the tables given below.

Table : STOCK

Itcode	Itname	Dcode	Qty	UnitPrc	StkDate
444	Drawing Copy	101	10	21	31-June-2009
445	Sharpener Camlin	102	25	13	21-Apr-2010
450	Eraser Natraj	101	40	6	11-Dec-2010
452	Gel Pen Montex	103	80	10	03-Jan-2010
457	Geometry Box	101	65	65	15-Nov-2009
467	Parker Premium	102	40	109	27-Oct-2009
469	Office File	103	27	34	13-Sep-2010

Table : DEALERS

Dcode	Dname	Location
101	Vikash Stationers	Lanka Varanasi
102	Bharat Drawing Emporium	Luxa Varanasi
103	Banaras Books Corporation	Bansphatak Varanasi

(i) To display all the information about items containing the word “pen” in the field Itname in the table **STOCK**

SELECT * FROM STOCK WHERE Itname LIKE “%pen%”;

(ii) List all the itname sold by Vikash Stationers

SELECT DISTINCT(Itname) FROM STOCK, DEALERS WHERE STOCK.Dcode= DEALERS.Dcode;

(iii) List all the Itname and StkDate in ascending order of StkDate

SELECT Itname, StkDate FROM STOCK ORDER BY StkDate;

(iv) List all the Itname, Qty and Dname for all the items for the items quantity more than 40.

SELECT Itname, Qty, Dname FROM STOCK, DEALERS WHERE STOCK.Dcode= DEALERS.Dcode;

(v) List all the details of the items for which UnitPrc is more than 10 and <= 50

SELECT * FROM STOCK WHERE UnitPrc BETWEEN 10 AND 50;

40. A binary file "Employee.dat" has structure [Emp_ID, Emp_Name, Salary, Mobile]. (5)

i. Write a user defined function *CreateFile()* to input data for a record and add to Employee.dat .

2½ marks for correct coding.

ii. Write a function *TotalSalary()* in Python which return the sum of salary of all the employees stored in the binary file "Employee.dat"

2½ marks for correct coding.

OR

A binary file "Account.dat" has structure (Acct_Number, Acct_Type, AcctHolderName, Balance).

i. Write a user defined function *CreateFile()* to input data for a record and add to Account.dat .

2 marks for correct coding.

ii. Write a function C*ountBalanceAbove(**BAL**)* in Python that would read contents of the file "Account.dat" and display the details of those accounts in which Balance is more than BAL. Also display number of such accounts.

2 marks for correct coding of displaying the account details & 1 mark for counting of such accounts.