KENDRIYA VIDYALAYA SANGATHAN, PATNA REGION
MARKING SCHEME 2ND PRE-BOARD EXAMINATION 2020-2021

CLASS: XII   **DURATION: 3 HOURS**
SUBJECT: COMPUTER SCIENCE (083)   **FULL 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 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)	
	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 invalid variables? (a) Amountin$ (b) _Num3_ (c) True (d) false	1
Ans:	(a) Amountin$ (Special Symbol $ not allowed) **½ Marks** (b) True (True is Keyword and keyword cannot be used as variable name) **½ Marks**	
2.	Suppose L=[1,3,5,7,9,11] then which if the following statement will not give the output [5,7]. (a) print(L[2:4]) (b) print(L[2:-2]) (c) print(L[-2:2]) (d) print(L[-4:-2])	1
Ans:	(c) print(L[-2:2]) **1 Marks**	
3	_____ are the files where data stored in columns separated by comma and set for values for columns in a row is treated as a data record and supports format for import and export data to the database and spreadsheet. (a) Text File (b) CSV File (c) Binary File (d) All of the above	1
Ans:	(b) CSV File **1 Mark**	
4.	Which of the following operator is not allowed with string data type?	1

	(a) + (b) * (c) ** (d) in	
Ans:	(c) ** **1 Marks**	
5.	A person wants to store value 2.3 to a variable T but by mistake he enters the value 2,3 to the Variable T. What will be the data type of the variable T? (a) List (b) Tuple (c) String (d) Error	1
Ans:	(b) Tuple **1 Marks**	
6.	Which of the following is/are not correct for dictionary? (a) A dictionary is a mutable and unordered set of **Key : Value** pair. (b) Unlike string and tuple, a dictionary is not a sequence because it is unordered set of elements. (c) Each of the keys within a dictionary must be unique. (d) Dictionaries are indexed by keys and its keys must be of any mutable data type.	1
Ans:	(d) Dictionaries are indexed by keys and its keys must be of any mutable data type. **1 Marks**	
7.	Suppose T=(1,2,3,4,5) Which of the following statement or statements will result into TypeError? (a) print(T(2)) (b) T(2)=20 (c) T[2]=20 (d) None of the above	1
Ans:	(a) instead of print(T(2)) it should be print(T[2]) tuple object is not callable (c) tuple object does not support item assignment because it is immutable **½ + ½ Marks**	
8.	what will be the output of following print statement in python: >>>a=20 >>>b=30 >>> print(a|b,a&b,a^b) (a) 20 30 10 (b) 10 20 30 (c) 30 10 20 (d) 30 20 10	1
Ans:	(d) 30 20 10 **1 Marks**	
9.	____ is a protocol which allows user to download Email messages from mail server to local computer. (a) SMTP (b) IMAP (c) POP3 (d) HTTP	1
Ans:	(b) IMAP (Internet Message Access Protocol) **1 Marks**	
10.	____ is a network device that connects networks of similar types (same protocols) whereas ____ network device connects dissimilar networks (different protocols) (a) Router, Bridge (b) Repeater, Gateway (c) Bridge, Gateway	1

	(d) Router, Gateway	
Ans:	(c) Bridge, Gateway ½ + ½ **Marks**	
11.	The HAVIG clause does which of the following? (a) Acts exactly like a WHERE clause (b) Acts like a WHERE clause but is used for columns rather than groups (c) Acts like a WHERE clause but is used for groups rather than rows (d) Acts like a WHERE clause but is used for rows rather than columns	1
Ans:	(c) Acts like a WHERE clause but is used for groups rather than rows **1 Marks**	
12	All aggregate functions except _____ ignore null values in their input collections (a) Count(attribute) (b) Count(*) (c) Avg() (d) Sum()	1
Ans:	(b) Count(*) **1 Marks**	
13.	Which of the following is not a Transaction Control Language (TCL) Command in SQL? (a) COMMIT (b) ROLLBACK (c) SAVE (d) SAVEPOINT	1
Ans:	(c) SAVE **1 Marks**	
14.	Which of the following is a DML Command? (a) DELETE (b) CREATE (c) ALTER (d) DROP	1
Ans:	(a) DELETE is a Data Manipulation Language Command **1 Marks**	
15.	Which of the following unguided media do not require proper alignment of devices? (a) Radio waves (b) Microwaves (c) Infrared (d) Satellite Wave	1
Ans:	(a) Radio Waves **1 Marks**	
16.	Suppose S is assigned as follows: S='newbar' All the following expression produce the same result except one. Find which one? (a) S[: : -1][-1]+S[len(S)-1] (b) S[0]+S[-1] (c) S[: :-5] (d) S[: : 5]	1
Ans:	(c) S[: :-5] **1 Marks**	
17.	What will be the output of following code snippet in Python? >>>S="DOCTOR" >>>print(S[-1::-1]	1
Ans:	ROTCOD **1 Marks**	
18.	The Equi-Join and Natural Join are equivalent except that	1

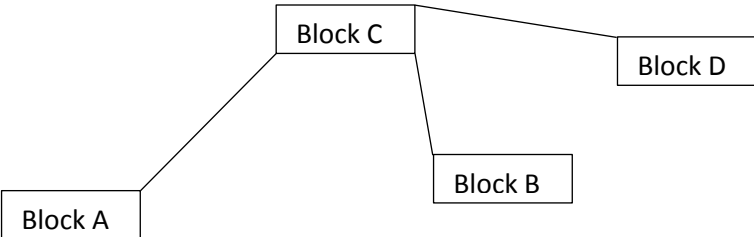|		
	(a) Duplicate columns are eliminated in Equi-Join that would otherwise appear in the Natural Join	
	(b) Duplicate columns are eliminated in Natural Join that would otherwise appear in the Equi-Join	
	(c) Duplicate rows are eliminated in Natural Join that would otherwise appear in the Equi-Join	
	(d) None of the above	
Ans:	(b) Duplicate columns are eliminated in Natural Join that would otherwise appear in the Equi-Join **1 Marks**	

19.	The _____ are the malicious programmers who break into secure system whereas _____ are more interested in gaining knowledge about computer system and possibly using this knowledge for playful pranks.
	    (a) hacker, cracker
	    (b) cracker, hacker
	    (c) None of the above
		1

Ans:	(b) Cracker, hacker **½ + ½ Marks**	
20.	Suppose there are suppliers from 30 different cities. A person wants to list only those records of **supplier table** who belongs to 'Delhi', 'Mumbai', 'Kolkata', 'Chennai', 'Chandigarh' and 'Ahmedabad'. Suggest him to use the operator used in SQL queries for solution of above problem.	1
Ans:	IN operator **1 Marks**	

21.	In _____ switching technique a fixed dedicated path is established before sending any message from sender to receiver.
	    (a) Packet Switching
	    (b) Circuit Switching
	    (c) Message Switching
	    (d) None of the above
		1

Ans:	(b) Circuit Switching **1 Marks**	
	SECTION – II **Both the case-study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries one marks.**	

22	Manish Kumar is running a private school. He wish to maintain the records of employees of his organization and for which he has decided
	Database Name: SCHOOL, Relation Name: STAFF with attributes as:
	   Ecode of integer type which is mandatory and unique
	   Ename of character type and size 20
	   Edesig of character type of size 20
	   Esalary of numeric type
	Suggest the SQL command for the following
	    (i) CREATE DATABASE with the name SCHOOL
	    (ii) CREATE relation STAFF with above description
	    (iii) After creating the structure of relation STAFF he want to add one more field with name Sex of 15 character size after field Ename.
	    (iv) After adding Sex filed he wish that instead of sex field name, its name should be Gender with same descriptions.
	    (v) Finally he wish to see the structure of the table STAFF.
		1
		1
		1
		
		1
		
		1

Ans:	(i) CREATE DATBASE SCHOOL; **1 Marks**
	(ii) CREATE TABLE STAFF
	        (
	          Ecode integer NOT NULL UNIQUE,
	          Ename char(20),
	          Edesig char(20),	

		Esalary decimal
		        );
		½ marks on CREATE TABLE STAFF and **½ Marks** on correct definition of its attributes.
		    (iii) ALTER TABLE STAFF ADD SEX CHAR(15) AFTER Ename;
		                     1 Marks
		    (iv) ALTER TABLE STAFF CHANGE SEX GENDER CHAR(15);
		                     1 Marks
		    (v) DESCRIBE STAFF;
		            OR
		            DESC STAFF;
		
		                     1 Marks	

23.	Manoj is trying to create a CSV file "RESULT.CSV" to write some records on Windows Operating System where EOL the EOL character is represented through '\r\n'. Further he want to read data from that CSV file. He has written the following code. As a programmer, help him to complete the program for its successful execution.
	
	``
	import _____ #Line 1
	#function to write CSV file
	def WRITERECINCSV():
	    fh=open("RESULT.CSV", "w")
	    csvwrtobj=csv._____(fh) #Line 2
	    resultdata= [
	             ['Name', 'Points', 'Rank']
	             ['Sharad', 4500, 20],
	             ['Nancy', 4800, 23],
	             ['Suman', 5000, 25]
	            ]
	    csvwrtobj._____(resultdata) #Line 3
	    fh.close()
	#Function to read records from csv file
	def READRECFROMCSV():
	    with open("RESULT.CSV", "r", _____) as fh: #Line 4
	        csvreadobj=csv.reader(fh)
	        for rec in csvreadobj:
	            print(____) #Line 5
	    fh.close()
	#__main__
	WRITERECINCSV()
	READRECFROMCSV()
	``
	
	  (a) Name the module he should import in **Line 1**
	  (b) Which function he should use to create the writer object in **Line 2?**
	  (c) Fill in the blank in **Line 3** to write multiple records in the csv file.
	  (d) Fill in the blank in **Line 4** so that csv file will be read considering every '\r\n' character as newline.
	  (e) Fill in the blank in **Line 5** to read one record at a time.
		1
		
		1
		1
		1
		
		1

Ans:	(a) import CSV 1 Marks (b) csvwrtobj=csv.writer(fh) 1 Marks (c) csvwrtobj.writerows(resultdata) 1 Marks (d) with open("RESULT.CSV", "r", newline="\r\n") as fh: 1 Marks (e) print(rec) 1 Marks	
	PART – B	

	SECTION – (I)	

24.	Evaluate the following expression
	    (a) 2*2**3//3
	    (b) 20 > 10 and 17 > 22 or not 20 > 3
		2

Ans:	(a) 5 Explanation ((2*(2**3))//3) **1 Marks** (b) False Explanation 20>3evaluates True and Not True will become False After that 20>10 evaluates True but 17>22 evaluates False True and False will evaluate False False or False will result into False. **1 Marks**	
25.	Differentiate between FTP and Telnet? <div align=center>or</div> Differentiate between Crackers and Hackers.	2
	FTP stands for File Transfer Protocol is a standard for the exchange of files across Internet. **Telnet** is an Internet utility that lets you log onto remote computer system. Thus you run software using remote computer resources. **1 Marks for Correct Use of FTP and 1 Marks for Correct use of Telnet** <div align=center>OR</div> **Crackers** are the malicious programmers who break into secure system for gaining unauthorized access to computer system for stealing and corrupting data whereas **Hackers** are more interested in gaining knowledge about computer systems and possibly using this knowledge for playful pranks. **1 Marks for correct definition of Cracker and 1 Marks for correct definition of Hacker**	
26.	Expand the following (a) CDMA (b) SIM (c) GPRS (d) LTE	2

Ans:	(a) CDMA: Code Division Multiple Access **½ Marks**
	    (b) SIM: Subscriber Identity Module **½ marks**
	    (c) GPRS: Global Packet Radio Service **½ Marks**
	    (d) LTE: Long Term Evolution **½ Marks**	

27.	What do you mean by function with default parameter? Explain it with the help of a suitable Python Code? <div align=center>or</div> What is difference between local and global variable. Explain it with a suitable python program.	2

Ans:	A function having default value for its one or more parameter(s) in its function definition header line is called function with default argument. A function may have both default and non-default parameters in the same function. If it is the case then the non-default parameter cannot follow default parameters and during function call passing arguments for default parameters becomes optional. If not passed value for default parameters then default value will be used otherwise supplied argument value will be used instead of default value.
	def calcsi(p=1000,r=5,t=6):
	    si=p*r*t/100
	    print("Principal Amout=",p)
	    print("Rate of Interest = ",r)
	    print("Time in years =",t)
	    print("Simple Interest=",si)
	The above written function can be called in many ways	

	calcsi() #default value for p,r and t will be used	
	calcsi(10000) #value for p will be 10000 but r and t will have its default value	
	calcsi(10000,10) #value of p will be 10000, for r will be 10 and t will have default value	
	calcsi(10000,10,20) #value for p will be 10000, r will be 10 and for t will be 20	
	1 Marks for Description and 1 marks for suitable code	
	OR	

	A variable defined inside a function is having local scope to the function whereas a variable defined outside all the function definition is in global. A variable defined inside a function may also be made global by using the keyword global before that variable. If there are two variables with same name one in local and one in global scope then the local variable gets the priority over the global one.
	num=20
	p=50
	def fun():
	   global num
	   p=60
	   print("inside fun num=",num,"and inside fun p =",p)
	   num=num+10
	   p=p+20
	   print("After updating num and p")
	   print("inside fun num=",num,"and inside fun p =",p)
	
	#__main__
	print("num in main or global scope is ",num)
	print("p in main = ",p)
	print("*"*50)
	fun()
	print("After calling function fun")
	print("value of num in main now ",num)
	print("P defined in local scope of function fun")
	print("Inside function fun instead of value 50 it is printing 60 for p")
	print("It indicates that if local and global variables has same name")
	print("Local variable gets priority over global one")
	print("Local p can be accessed inside function in which it is defined")
	print("hence outside function fun p changed value of p is not reflected")
	print("value of p defined local to fun is not accessible in main",p)
	
	1 Marks for Definition or explanation and 1 marks for python suitable code. Apart from this code any suitable code can be considered if correct.	

28.	Find the errors in the following code. Write the correct code underline the corrected code. Write comments for correction
	Def FUN(x):
	   a='k'
	   print(a*x)
	   print(a*str(x))
	for in [1,2,10]
	FUN(n)
		2

Ans:	<u>def</u> FUN(x): #instead of Def it should be def	

	a='k'
	print(a*x)
	print(a+str(x)) #instead of * it should be + to concatenate
	for n in [1,2,10]: #variable n is missing and it must finish with :
	    FUN(n)
	½ Marks for each correction. Total 2 Marks	

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 and maximum values that can be assigned to each of the variable lower and upper. import random AR=[10,20,40,50,70,80] Lower=random.randint(1,3) Upper=random.randint(2,4) for P in range(Lower, Upper+1): print(AR[P],end="@") (i) 10@20@ (ii) 10@20@40@50@70@ (iii) 20@40@50@70@ (iv) 20@40@50@70@80@	2
Ans:	Possible output is (iii) as value of p can never be 0 and as lower ranges from 1 to 3 and value of p cannot exceed 4 as value of upper will range from 2 to 4. Minimum value of Lower = 1 and of Upper =2 Maximum value of Lower = 3 and of Upper =4 **1 Marks for correct possible output and ½ + ½ Marks for correct value of Minimum and Maximum variable.**	
30.	Convert following infix expression to postfix expression and also show the status of stack after each step of conversion. (A+B)/(C*D)-E	2
Ans:	AB+CD*/E- **1 Marks for Correct Postfix Expression and 1 marks for showing stack status.**	
31.	Define the following: (a) Degree and (b) Cardinality.	2
And:	Degree: Number of columns or attributes in a relation is called degree of that relation. **1 Marks** Cardinality: Number of rows or tuples in a relation is called cardinality of that relation. **1 Marks**	
32.	Differentiate between delete and drop command in SQL.	2
Ans:	DELETE: This SQL command is used to remove records from a relation or table. This command is a DML command. DROP: This SQL command is used to delete a table or relation from an active database. This is a DDL command. **1 Marks for Correct use of DELETE and 1 Marks for correct use of DROP**	

33.	Find and write the output of following python code
	def fun(s):
	   k=len(s)
	   m=""
	   for i in range(0,k):
	     if s[i].isalpha():
		2

	if s[i].isupper():	
	m=m+s[i].lower()	
	else:	
	m=m+s[i].upper()	
	else:	
	if s[i].isdigit():	
	m=m+"@"	
	else:	
	m=m+'#'	
	print(m)	
	fun("Abc123@GmaiL.Com")	
Ans:	aBC@@@#gMAIL#cOM **2 Marks for correct output no marks on partially correct output**	
	SECTION – II	
34.	Write a function MODIFY(ARR, N) in Python where ARR is a list and n is an integer number. If the element of the list is completely divisible by N then add N to it otherwise subtract n from it. Sample input data is as below ARR=[13,22,25,33,40,55,63] if N = 5 then the output will be ARR=[8,17,30,28,45,60,58]	3

Ans	def MODIFY(ARR, N): **# 1 Marks**
	  for i in range(len(ARR): **# ½ Marks**
	    if ARR[i]%N==0: **# ½ Marks**
	      ARR[i]=ARR[i]+N **# ½ Marks**
	    else:
	      ARR[i]=ARR[i]-5 **# ½ Marks**	

35.	Write a python function that count the number of occurrences of word 'this' irrespective of its case in the file **story.txt** and display its count. or Write a python function that will find the total occurrences of letter 'M' or 'm' and 'T' or 't' in the file **notes.txt**.	3

Ans:	def Count_this(): # ½ Marks
	  count=0
	  fin=open("story.txt","r") # ½ Marks
	  for line in fin: # ½ Marks
	    words=line.split() # ½ Marks
	    for word in words: # ½ marks
	      if word=='this' or word=='This' or word=='THIS': # ½ Marks
	        count=count+1
	  fin.close()
	  print("Total count of word this = ",count)
	
	                      OR
	def readchar(): # ½ Marks
	  fin=open("notes.txt","r") # ½ marks
	  str1=fin.read() # ½ Marks
	  mcount=tcount=0
	  for ch in str1: # ½ Marks
	    if ch=='m' or ch=='M':
	    mcount=mcount+1	

	elif ch=='t' or ch=='T': # ½ Marks
	         tcount=tcount+1
	    print("Total count of m= ",mcount," and t =",tcount) # ½ Marks
	    fin.close()	

36.	What will be output of SQL commands (i) to (iii) based on the relation DEPT and WORKER	3

<div align="center">Table : DEPT</div>

DCODE	DEPARTMENT	CITY
D01	MEDIA	DELHI
D02	MARKETING	DELHI
D03	INFRASTRUCTURE	MUMBAI
D05	FINANCE	KOLKATA
D04	HUMAN RESOURCE	MUMBAI

<div align="center">Table : WORKER</div>

WNO	NAME	DOJ	DOB	GENDER	DCODE
1001	George K	2013-09-02	1991-09-01	MALE	D01
1002	Ryma Sen	2012-12-11	1990-12-15	FEMALE	D03
1003	Mohitesh	2013-02-03	1987-09-04	MALE	D05
1007	Anil Jha	2014-01-17	1984-10-19	MALE	D04
1004	Manila Sahai	2012-12-09	1986-11-14	FEMALE	D01
1005	R. Sahay	2013-11-18	1987-03-31	MALE	D02
1006	Jaya Priya	2014-06-09	1985-06-23	FEMALE	D05

    (i)   SELECT COUNT(DISTINCT CITY) FROM DEPT;
    (ii)   SELECT MAX(DOJ), MIN(DOB) FROM WORKER;
    (iii)   SELECT NAME, DEPARTMENT, CITY
            FROM WORKER W, DEPT D
            WHERE W.DCODE = D.DCODE AND WNO < 1005

Ans:	**(i)** **COUNT(DISTINCT CITY)**
	        3
	(ii) **MAX(DOJ)** **MIN(DOB)**
	        2014-01-17 1984-10-19
	(iii) **NAME** **DEPARTMENT** **CITY**
	        George K MEDIA DELHI
	        Ramya Sen INFRASTRUCTURE MUMBAI
	        Mohitesh FINNCE KOLKATA
	        Manila Sahai MEDIA DELHI
	 1 Marks for each correct output	

37.	Write a function in PUSH(Arr) in python, where Arr is a list of numbers. From this list push all numbers divisible by 3 into stack implemented by using a list. Display the stack if it has at least one element otherwise suitable error message must be shown.
	Ans:
	def PUSH(Arr): # ½ Marks
	   stk=[] # ½ Marks
	   for i in range(len(Arr)): # ½ Marks
	     if Arr[i]%3: # ½ Marks
	       stk.append(Arr[i]) # ½ Marks
	   if len(s)==0: # ½ Marks
	     print("Stack is Empty)
	   else:
	      print("Stack elements are ",stk)
	 OR
		3

	Write a function POP(Arr) in Python, Where Arr is a stack implemented by a list of numbers. The function returns the value deleted from the stack otherwise suitable error message must be displayed.
	Ans:
	def POP(Arr): **# ½ Marks**
	    if len(Arr) ==0: **# ½ Marks**
	       print("Stack underflow") **# ½ Marks**
	    else:
	       print("Deleted Element from stack is ",Arr[-1]) **# ½ Marks**
	       Arr.pop() **# 1 marks**	

	SECTION – III	
38.	Software development company has set up its new centre at Patna for its office and web based activities. It has 4 blocks of buildings named Block A, Block B, Block C and Block D. **Number of Computers in Each block is as below** Block A 25 Computers Block B 50 Computers Block C 125 Computers Block D 10 Computers **Distance between various blocks in meters are hereunder** Block A to Block B = 80m Block B to Block C = 40m Block A to Block C = 100m Block C to Block D = 50m **Answer the following questions based on above description**	
	(i) Suggest the most suitable Block where the Server of this company should be placed with suitable reason.	1
	Ans: Block C (Where there are maximum number of computers. It is because by doing so most of the processing can be made local. ***1 Marks***	
	(ii) Suggest the type of network to connect all the Blocks with suitable reason.	1
	*Ans: **LAN (Local Area Network)** because distance less than 10 kms.**1 Marks***	
	(iii) Suggest the suitable cable layout for connecting different blocks. Ans:	1
	                                                                   1 Marks	
	(iv) Suggest the most suitable guided medium that for faster and secure data communication in this network.	1
	Ans: Optic Fibre cable can be used as it is a guided media through which data travels in the form of fluctuating light (fastest speed) and at the same time it is very much secure. ***1 Marks***	
	(v) Suggest the suitable place for installation of HUB/Switch and Repeater.	1
	Ans: Hub and Switch required in each block and repeater required between Block A and Block C because the distance is more than 50 meters. ***1 Marks***	

39.	Write SQL commands for the following queries (i) to (v) based on the relations PRODUCT and CLIENT	
	Table: PRODUCT	

P_ID	PRODUCTNAME	MANUFACTURER	PRICE
TP01	TELCOME POWDER	LAK	40
FW05	FACE WASH	ABC	45
BS01	BATH SOAP	ABC	55
SH06	SHAMPOO	XYZ	120
FW12	FACE WASH	XYZ	95

Table: CLIENT

C_ID	CLIENTNAME	CITY	P_ID
01	COSMETIC SHOP	DELHI	FW05
06	TOTAL HEALTH	MUMBAI	BS01
12	LIVE LIFE	DELHI	SH06
15	PRETTY WOMAN	DELHI	FW12
16	DREAMS	BANGLORE	TP01

(i) To display unique PRODUCTNAME from product table.
(ii) To display the details of those clients who belongs to DELHI.
(iii) To display the details of Product whose price in the range of 50 to 100. (Both inclusive).
(iv) To increase the price of all product by 10.
(v) To display the CLIENTNAME, CITY FROM table CLIENT, and PRODUCTNAME and PRICE from PRODUCT table with their corresponding matching P-ID.

(marks column: 1, 1, 1, 1, 1)

Ans:	*(i)* *SELECT DISTINCT(PRODUCTNAME) FROM PRODUCT;* *(ii)* *SELECT * FROM CLIENT WHERE CITY='DELHI';* *(iii)* *SELECT * FROM PRODUCT WHERE PRICE BETWEEN 50 AND 100;* *(iv)* *UPDATE PRODUCT SET PRICE=PRICE+10* *(v)* *SELECT CLIENTNAME, CITY, PRODUCTNAME, PRICE FROM CLIENT C PRODUCT P WHERE P.P_ID=C.P_ID;* **1 Marks for each correct answer**	

40.	A binary file ITEM.DAT has structure [Item_id, Item_Name, Company and Price].	5
	(i) Write a user defined function CreateFile() to input data for a record and add to ITEM.DAT file. (ii) Write a function CountRec(Company) in Python which accepts the Company name as Parameter and count and return number of products supplied by that company stored in a binary file ITEM.DAT. OR A binary file "TEACHER.DAT" has the structure [Emp_Code, Name, Dept, Designation and Basic]. Write a function CountRec() in Python that will count and display details all those teacher whose basic is >50000 and belongs to PGT.	

Ans:	import pickle
	def CreateFile():
	    foutb=open("ITEM.DAT","ab")
	   Item_id=input("Enter Item Id:- ")
	  Item_name=input("Enter Item Name:- ")
	  Company=input("Enter company name:- ")	

```
        Price=float(input("Enter Price of item:- "))
        record=[Item_id, Item_Name, Company, Price]
        pickle.dump(record,foutb)
        foutb.close()
def CountRec(Company):
    fileobj=open("ITEM.DAT","rb")
    count=0
    try:
        while True:
            recordread=pickle.load(fileobj)
            if Company==recordread[2]:
                count=count+1
    except:
        fileobj.close()
    return count
```

½ Marks for importing pickle module

½ marks for correct syntax of opening file in binary mode for writing

½ Marks for creating a list from read data

½ Marks for correct use of pickle.dump()

½ Marks for correct syntax for opening file in binary mode for reading

½ Marks for correct use of ickle.load() method

½ Marks for comparing filed value for company name

½ Marks for returning number of matching records

½ Marks for proper use of try and except

½ marks for correct function definition Header line if Countrec

<div align="center">OR</div>

```
import pickle
def CountRec():
    fileobj=open("TEACHER.DAT","rb")
    count=0
    try:
        while True:
            recordread=pickle.load(fileobj)
            if  recordread[3]=="PGT" and recordread[4]>50000:
                count=count+1
                print("Employee Code          =", Emp_Code)
                print("Employee Name          =",Name )
                print("Employee Department  =",Dept )
                print("Employee Designation =",Designation)
                print("Basic Salary              =",Basic)
    except:
        fileobj.close()
    return count
```

½ Marks for importing pickle module

½ Marks for correct definition of function header line of function CountRec

½ Marks for correct syntax for opening file in binary mode for reading

½ Marks for correct use of pickle.load() method

1 Marks for comparing filed value for designation PGT and basic >50000

1 Marks for displaying record of matched record

½+ ½ Marks for proper use of try and except