Class: XII Session: 2020-21
Computer Science (083)
Pre-Board Paper-1

Class: XII   **Date: 07/01/2021**
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	Name the python library modules which need to be imported to invoke the following functions: i) sin( ) ii) randint( )	1

2	Write the output from the following code:
	    t=('a' , 'b' , 'c' , 'A' , 'B')
	    print(max(T))
		1

3	Name the protocol used to send email.	1
4	Which command is used to change some values in existing rows?	1

5	which of the following is an invalid statement?
	   a) abc = 1,000,000
	   b)a b c = 1000 2000 3000
	   c) a,b,c = 1000,2000,3000
	   d) a_b_c = 1,000,0000
		1

6	In SQL which declaration doesn't use the same number of bytes and consumption of bytes depend on the input data?	1
7	if a=[5,4,3,2,2,2,1], evaluate the following expression: print(a[a[a[a[2]+1]]])	1

8	which of the following is not a comparison query?
	   a) IN
	   b) BETWEEN
	   c) AND
	   d) LIKE
		1

9	Write the following expression in python: $\dfrac{1}{3} b^2 h$	1

10	Give the output of the following:
	   x= "Marvellous"
	   print(x[2:7], "and" , x[-4:-1])
		1

11	Which protocol is used in creating a connection with a remote machine?	1
12	Write the statement to read the content from stud.csv file	1
13	In SQL what is the use of IS NOT NULL operator?	1
14	which constraint is used in SQL to place the default value when no value is provided.	1

15	What is the output produce by the following code?
	
	   alst=[1,2,3,4,5,6,7,8,9]
	   print(alst[: :3])
		1

16	A tuple is declared as :
	   t1=(1,2,3,3,5,6,5,6,7,3,8,9)
	   what will be the value of print(t1.count(3))
		1

17	Amit wants to transfer data within a city at very high speed. write the wired transmission medium and type of network he would used.	1

18	Which of the following is the correct form of using dict()?
	   a) >>> dict([('a' , 45), ('b', 78)])
	   b) dict({'a' : 45, 'b' :78})
	   c) dict('a'=45, 'b'=78)
	   d) All of these
		1

19	Which of the following is/are DML commands?
	   a) Insert b) Delete
	   c) Update d) All of these
		1

20	Write a query to display the records from table STUDENT in alphabetical order as per the name of the student.	1
21	Using someone else's twitter handle to post something , will be consider which type of cibercrime.	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 | Abhay is a software engineer, working in a company where he want to maintain database for CABS and CUSTOMERS. He has decided that:
    *Name of the database- CABHUB
    *Name of the tables- CAB, CUSTOMER
    *The attributes of CAB are as follows:
       Vcode- numeric
       VehicleName- character of size 15
       Brand- charater of size 10
       capacity- numeric
       charges- numeric

    *The attributes of CUSTOMER are as follows:
       Ccode- numeric
       Cname- character of 20
       Vcode- numeric | |

CAB					
VCODE	VEHICLENAME	BRAND	COLOR	CAPACITY	CHARGES
100	INNOVA	TOYOTA	WHITE	7	15
102	SX4	SUZUKI	BLUE	4	14
104	C CLASS	MERCEDES	RED	4	35
105	A STAR	SUZUKI	WHITE	3	14
108	INDIGO	TATA	SILVER	3	12

CUSTOMER

CCODE	CNAME	VCODE
1	HEMANT SAHU	101
2	RAJ LAL	108
3	FEROZA SHAH	105
4	KETAN DHAL	104

	a) identify the attribute suitable to declare as a foreign key.	1
	b) write the degree and cardinality of CAB table	1
	c) abhay want to do some changes in the table customer. help him to write the query to update the Vcode as 102 of Ketan Dhal	1
	d) abhay want to delete all the records from the table CAB. which command(s) he can use from the following: i)ALTER TABLE CAB DROP CAB; ii) TRUNCATE TABLE CAB; iii) DELETE FROM CAB ; iv) DELETE * FROM CAB;	1
	e) Help abhay to write a query to display the name of vehicles and brands whose capacity is 3.	1
23	Priya Sharma of class 12 is writing a program to create a csv file "phonebook.csv" which will contain names & numbers for some entries. She has written the following code. As a programmer, help her to successfully execute the given task.	

```
import _____          # Line 1
def addRec(Name,Number):            # to write / add data
into the CSV file
    f=open(' user.csv','_____')      # Line 2
    FileWriter=csv._____(f)     # Line 3
    FileWriter.writerow([Name,Number])
  f.close()
#csv file reading code
def readRec(): # to read data from CSV file
    with open(' user.csv','r') as newFile:
    FileReader = csv._____(newFile)     # Line 4
    for row in FileReader:
        print (row[0],row[1])
        newFile._____              # Line 5
```

	addRec("Raya",1234567844) readRec()	
	(a) Name the module she should import in Line 1.	1
	(b) In which mode, Priya should open the file to add data into the file	1
	(c) Fill in the blank in Line 3 to write the data to a csv file.	1
	(d) Fill in the blank in Line 4 to read the data from a csv file.	1
	(e) Fill in the blank in Line 5 to close the file.	1
	Part – B	
	Section-I	
24	Evaluate the following expressions: a) e = (1+2) * 3 / 4 b) ((2<10) and (10<2) or (3<8) and not 3<-3)	2

25	Write output of the following codes.
	 i) a=8
	     while(a>0):
	         print("python")
	     a=a-3
	     if a==5:
	         break
	     else:
	         Print("Going Out")
		2

26	What is the difference between packet switching and circuit switching? **OR** Write any two difference between Twisted pair and coaxial cable.	2

27	What are the possible outcome(s) after executed the following code? Also specify the maximum and minimum value.
	
	 import random
	 pick=random.randint(0,3)
	 city=['DELHI', 'MUMBAI', 'KOLKATA', 'CHENNAI']
	 for i in city:
	     for j in range(1,pick):
	         print(i, end=' ')
		2

print()

(i)	(ii)
DELHIDELHI MUMBAIMUMBAI CHENNAICHENNAI KOLKATAKOLKATA	DELHI DELHIMUMBAI DELHIMUMBAICHENNAI
(iii)	(iv)
DELHI MUMBAI CHENNAI KOLKATA	DELHI MUMBAIMUMBAI KOLKATAKOLKATAKOLKATA

28	Expand the following terms: a) POP3　　b) TCP/IP　　c) CDMA　　　　d) GSM	2
29	What are the difference between parameters and arguments? 　　**OR** What are the keyword argument ?explain with example	2
30	Rewrite the following python code after removing all syntax error(s). Underline the corrections done. 　def main(): 　　r=input("Enter any radius:") 　　a=pi * math.pow(r, 2) 　　print ("Area= ", + a)	2
31	What is the use of wildcard operator?	2
32	Explain the use of count and fetchmany() method using suitable example?	2
33	Write the full forms of DDL and DML. Write any two commands of DDL in SQL	2
	Section- II	
34	Write a function frecount(list) in Python, to find the frequency of a number in a list .	3

		Sample Input Data of the list: list=[1,1,5,2,3,3,3,4,6] enter number whose frequency is to be counted: 3 **output** 3 exists 3 times in list	

35	Write a function CountFirstDigit() to count the number of lines starting with a digit in a text file "Diary.txt".
	
	if the "Diary.txt" contents are as follows:
	updated information displayed on
	23 december 2020.
	
	The CountFirstDigit() function should display the output as:
	no. of lines start with a digit : 1
	
	OR
	
	Given a text file car.txt following information of cars carno, carname, containing mileage. Write a python function display() to display details of all those cars whose mileage is from 100 to 150.
	
	if the "car.txt" contents are as follows:
	1 Toyota 125
	2 Innova 200
	3 Breeza 150
	
	The display() function should display the output as:
	1 Toyota 125
	3 Breeza 150
		3

36	Write the outputs of the SQL queries (i) to (iii) based on the tables COMPANY and CUSTOMER. **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		3

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	ROHAN SHARMA	70,000	20	222
102	DEEPAK KUMAR	50,000	10	666
103	MOHAN KUMAR	30,000	5	111
104	SAHIL BANSAL	35,000	3	333
105	NEHA SONI	25,000	7	444
106	SONAL AGGARWAL	20,000	5	333

i) SELECT COUNT(*), CITY FROM COMPANY GROUP BY CITY;

ii) SELECT MIN(PRICE), MAX(PRICE) FROM CUSTOMER WHERE QTY>10;

iii) SELECT PRODUCTNAME, CITY, PRICE FROM COMPANY, CUSTOMER WHERE COMPANY.CID=CUSTOMER.CID AND PRODUCTNAME='MOBILE';

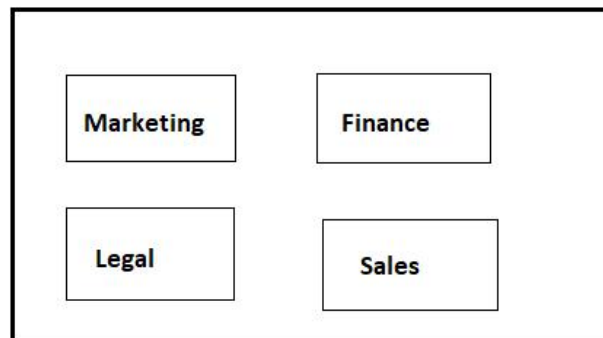|		
37	Write Add new(book, Name) method in python to Add a new Book , considering them to act as PUSH operation of the data structure stack. **OR** Write a function in Python and Remove(book) , to Remove a Book from a list of Books. The function returns the value deleted from the stack book.	3
	Section-III	
38	ABC Pvt. Ltd. is setting up the network in the Bengaluru. There are four departments named as Market, Finance, legal and Sales. 	5

Distance between various buildings is as follows:

Market to Finance	80 mt
Market to Legal	180 mt
Market to Sales	100 mt
Legal to Sales	150 mt
Legal to Finance	100 mt
Finance to Sales	50 mt

Number of computers in the building:

Market	20
Legal	10
Finance	8
sales	42

a) Suggest a cable layout of connections between the Department and specify the topology.

b) Suggest the most suitable building to place the server by giving suitable reason.

c) Suggest the placement of (i) modem ii) hub/switch in the network.

d) The organization is planning to link its sale counter situated in various part of the same city. Which type of network out of LAN, WAN, MAN will be formed? justify.

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

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

TRAINER				
TID	TNAME	CITY	HIREDATE	SA
101	SUNAINA	MUMBAI	1998-10-15	9
102	ANAMIKA	DELHI	1994-12-24	8
103	DEEPTI	CHANDIGARH	2001-12-21	8
104	MEENAKSHI	DELHI	2002-12-25	7
105	RICHA	MUMBAIL	1996-01-12	9
106	MANIPRABHA	CHENNAI	2001-12-12	6

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

a) Display the Trainer Name, City & salary in descending order of their Hiredate.

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

c) To display all TNAME and CITY of Trainer who joined the institute in the onth of December 2001.

d) To display number of Trainers from each city.

e) To show all information about Trainer who belongs to Mumbai.

40	Create file phonebook.dat that has structure[Name, Phone, Pincode]. i)Write a user defined function CreateFile() to input data for a record and add to phonebook.dat . ii)Write a function EditPhone(Name) in Python which accepts the Name as parameter to edit the phone number of "Arvind" In file. If there is no record for "Arvind" report error. **OR** A binary file "Emp.DAT" has structure (Emp_Id, Name, Salary). Write a function display() in Python that would read contents of the file "Emp.DAT" and display the details of those employees whose salary is above 50,000. Also display their count.	5