

**KENDRIYA VIDYALAYA SANGATHAN,  
DELHI REGION 2<sup>nd</sup> PREBOARD  
EXAMINATION 2020-21  
Class XII**

**Subject: 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

Que. No	Part A	Marks Allocated
	<b>Section-I</b> <b>Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.</b>	
1	Find the invalid identifier from the following a) Name b) if c) Numb d) E_Emp	1
2	What will be the of print(list1[1:8:2]) ?If list1=[6,23,3,2,0,9,8,75]	1
3	_____ is the default delimiter for a CSV file.	1
4	Identify the valid Relational operator in Python from the following. a) ? b) < c) ** d) and	1
5	Suppose a tuple T is declared as T = (10, 12, 43, 39), which of the following is incorrect? 1. print(T.count(12)) 2. print(any(T)) 3. print(sum(T)) 4. T.sort()	1
6	Write a statement in Python to create an empty dictionary.	1
7	If T=("thistuple") What will be the output of print(type(T))	1
8	Name the built-in string() function / method that is used to return true if all characters in the string are alphanumeric.	1
9	Name the protocol that is used for the transfer of computer files between a client and server on a computer network.	1
10	In this cyber crime, a criminal accesses data about a person's bank account, credit card, social security card, debit card and other sensitive information to gain money or to buy things online in the victim's name that can result in major financial loss for the victim and even spoil the victim's credit history. Identify the type of cybercrime for these situations.	1
11	In SQL, which clause is used to remove redundant rows from the result of the SELECT statement?	1

12	_____ is used as the range operator in MySQL.	1																												
13	What is NULL value?	1																												
14	Which of the following is a DDL command? a) Update B. Insert C. Select D. Drop	1																												
15	The organization is planning to link its sale counter situated in various parts of the same city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.	1																												
16	Identify the valid declaration of L: L=("element",) 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='ASTRING' print(Name(-1:-12:-2))	1																												
18	In SQL, write the query to delete structure of a given table "student"	1																												
19	Write the expanded form of ARPANET.	1																												
20	Foreign key is the one in which the _____ of one relation is referenced in another relation.	1																												
21	Rearrange the following terms in increasing order based on network span or geographical spread.. LAN,WAN,PAN,MAN	1																												
<b>Section-II</b>																														
<b>Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark</b>																														
22	A departmental store MyStore is considering to maintain their inventory using SQL to store the data. As a database administer, Anand has decided that : <ul style="list-style-type: none"> <li>Name of the database - MyStore</li> <li>Name of the table - SOFTDRINK</li> <li>The attributes of SOFTDRINK are as follows: DRINKCODE - numeric DNAME – character of size 20 PRICE - numeric CALORIES – numeric</li> </ul>																													
Table : SOFTDRINK																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">DRINKCODE</th> <th style="width: 40%;">DNAME</th> <th style="width: 15%;">PRICE</th> <th style="width: 30%;">CALORIES</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Lime and Lemon</td> <td>20.00</td> <td>120</td> </tr> <tr> <td>102</td> <td>Apple Drink</td> <td>18.00</td> <td>120</td> </tr> <tr> <td>103</td> <td>Nature Nectar</td> <td>15.00</td> <td>115</td> </tr> <tr> <td>104</td> <td>Green Mango</td> <td>15.00</td> <td>140</td> </tr> <tr> <td>105</td> <td>Aam Panna</td> <td>20.00</td> <td>135</td> </tr> <tr> <td>106</td> <td>Mango Juice Bahaar</td> <td>12.00</td> <td>150</td> </tr> </tbody> </table>			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 Bahaar	12.00	150
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	a) Identify the attribute best suitable to be declared as a primary key.	1																												
	b) Write the degree and cardinality of the table SOFTDRINK.	1																												
	c) Insert the following data into the attributes DRINKCODE,DNAME,PRICE and CALORIES respectively in the given table SOFTDRINK. DRINKCODE=107, DNAME='PEPSI' and PRICE=30.	1																												
	d) Anand want to remove the data from table SOFTDRINK	1																												

	Which command will he use from the following: a) DELETE FROM SOFTDRINK; b) DROP TABLE SOFTDRINK; c) DROP DATABASE MyStore; d) DELETE store FROM MyStore;	
	e) Now Anand 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	<p>Priti of class 12 is writing a program to create a CSV file "emp.csv". She has written the following code to read the content of file emp.csv and display the employee record whose name begins from "S" also show no. of employee with first letter "S" out of total record. As a programmer, help her to successfully execute the given task. Consider the following CSV file (emp.csv):</p> <pre> 1,Peter,3500 2,Scott,4000 3,Harry,5000 4,Michael,2500 5,Sam,4200  import _____ # Line 1 def SNames():     with open(emp.csv , _____) as csvfile: # Line 2         myreader = csv. _____(csvfile, delimiter=',') # Line 3         count_rec=0         count_s=0         for row in _____: #Line4             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) </pre>	
	( 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 Line3 to read the data from a csv file.	1
	( d ) Write the output he will obtain while executing the above program.	1
	( e )Fill in the blank in Line4 for reading the file record	1
	<b>Part – B</b>	
	<b>Section-I</b>	
24	Evaluate the following expressions (a) $2+9*((3*12)-8)/10$ (b) $1 > 2$ and $3 < 16$ or not $18 < 3$	2
25	How is Trojan horses different from Worms? OR Differentiate between cracking and hacking.	2
26	Expand the following terms: 1) POP (b)TCP/IP (c)PPP (d) SLIP	2
27	What are immutable and mutable types? List immutable and mutable types of Python. OR What do you mean by keyword argument in python? Give example.	2
28	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.	2

	<pre> 30 = To for K in range(0,To) IF k%4==0: print (K*4) Else: print (K + 3) </pre>	
29	<p>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.</p> <pre> import random A=[11,22,33,44,55,66]; Lower =random.randint(1,3) Upper =random.randint(2,4) for P in range(Lower, Upper +1):     print (A[P],end='#') </pre> <p>(i) 66#44#55# (ii) 33#44#55# (iii) 11#22#33#44#55# (iv) 33#44#55#11</p>	2
30	<p>What do you understand by Foreign Key in a table? Give a suitable example of Foreign Key from a table containing some meaningful data.</p>	2
31	<p>Differentiate between <i>fetchmany()</i> and <i>fetchall()</i> methods with suitable examples for each.</p>	2
32	<p>What is the difference between DDL and DML.</p>	2
33	<pre> def Change(P ,Q=30):     P=P+Q     Q=P-Q     print( P,"#",Q)     return (P) R = 150 S = 100 R = Change(R,S) print(R,"#",S) S = Change(S) </pre>	2
<b>Section-II</b>		
34	<p>Python program to print even length words in a string</p> <p><b>Input:</b> s = "This is a python language"</p> <p><b>Output:</b> This is python language</p> <p><b>Input:</b> s = "i am muskan"</p> <p><b>Output:</b> am Muskan</p>	3
35	<p>Write a program to write those lines which have the character 'p' from one text file to another text file.</p> <p>OR</p> <p>Write a program to count the number of times the occurrence of 'is' word in a text file</p>	3
36	<p>Write the outputs of the SQL queries (i) to (iii) based on the relations COMPANY and CUSTOMER given below:</p>	3

**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	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
107	ARUN SINGH	50,000	15	666

- 1) SELECT CITY,COUNT(\*) FROM COMPANY GROUP BY CITY
- 2) SELECT MIN(PRICE),MAX(PRICE),FROM CUSTOMER WHERE QTY>10
- 3) SELECT PRODUCTNAME,CITY,PRICE  
FROM COMPANY,CUSTOMER  
WHERE COMPANY.CID=CUSTOMER.CID AND  
PRODUCTNAME="MOBILE"

37

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

**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.

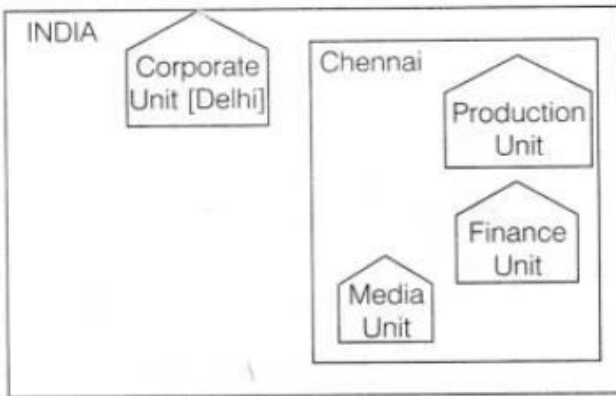
3

**Section-III**

38

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

5



**Approximate distance between these units are as follows:**

From	To	Distance
Production Unit	Finance Unit	70 m
Production Unit	Media Unit	15 km
Production Unit	Corporate Unit	2112 km
Finance Unit	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

(a) Suggest the most suitable Unit to install the server of this Company with a suitable reason.

(b) Suggest the kind of network required (out of LAN, MAN, WAN) for connecting each of the following office units:

Production Unit and Media Unit

Production Unit and Finance Unit.

(c) Which one of the following device will you suggest for connecting all the computers with in each of their office units?

- Switch/Hub
- Modem
- Telephone.

(d) Which of the following communication media, will you suggest to be procured by the company for connecting their local office units in Chennai for very effective (high speed) communication?

- Telephone cable
- Optical fibre
- Ethernet cable.

	(e) Suggest a cable/wiring layout for connecting the company's local office units located in Chennai. Also, suggest an effective method/technology for connecting the company's office unit located in Delhi																																																																									
39	<p>Write SQL commands for the following queries (i) to (v) based on the relations SCHOOL and Admin given below</p> <p style="text-align: center;"><b>Table : SCHOOL</b></p> <table border="1"> <thead> <tr> <th>CODE</th> <th>TEACHER NAME</th> <th>SUBJECT</th> <th>DOJ</th> <th>PERIODS</th> <th>EXPERIENCE</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>Ravi Shankar</td> <td>English</td> <td>12/3/2000</td> <td>24</td> <td>10</td> </tr> <tr> <td>1009</td> <td>Priya Rai</td> <td>Physics</td> <td>03/09/1998</td> <td>26</td> <td>12</td> </tr> <tr> <td>1203</td> <td>Lisa Anand</td> <td>English</td> <td>09/04/2000</td> <td>27</td> <td>5</td> </tr> <tr> <td>1045</td> <td>Yashraj</td> <td>Maths</td> <td>24/08/2000</td> <td>24</td> <td>15</td> </tr> <tr> <td>1123</td> <td>Ganan</td> <td>Physics</td> <td>16/07/1999</td> <td>28</td> <td>3</td> </tr> <tr> <td>1167</td> <td>Harish B</td> <td>Chemistry</td> <td>19/10/1999</td> <td>27</td> <td>5</td> </tr> <tr> <td>1215</td> <td>Umesh</td> <td>Physics</td> <td>11/05/1998</td> <td>22</td> <td>16</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Table: Admin</b></p> <table border="1"> <thead> <tr> <th>Code</th> <th>Gender</th> <th>Designation</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>Male</td> <td>Vice Principla</td> </tr> <tr> <td>1009</td> <td>Female</td> <td>Co-ordinator</td> </tr> <tr> <td>1203</td> <td>Female</td> <td>Co-ordinator</td> </tr> <tr> <td>1045</td> <td>Male</td> <td>HOD</td> </tr> <tr> <td>1123</td> <td>Male</td> <td>Senior Teacher</td> </tr> <tr> <td>1167</td> <td>Male</td> <td>Senior Teacher</td> </tr> <tr> <td>1215</td> <td>Male</td> <td>HOD</td> </tr> </tbody> </table> <p>(a) To display TEACHERNAME,PERIODS of all teachers whose periods are more than 25.</p> <p>(b) To display all the information from the table SCHOOL in descending order of experience.</p> <p>(c) To display Designation without duplicate entries from the table ADMIN.</p> <p>(d) To display TEACHERNAME,CODE and corresponding DESIGNATION from tables SCHOOL and Admin of Male teachers.</p> <p>(e) To increase the periods by 2 of those teachers whose experience is more than 10 years.</p>	CODE	TEACHER NAME	SUBJECT	DOJ	PERIODS	EXPERIENCE	1001	Ravi Shankar	English	12/3/2000	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	Code	Gender	Designation	1001	Male	Vice Principla	1009	Female	Co-ordinator	1203	Female	Co-ordinator	1045	Male	HOD	1123	Male	Senior Teacher	1167	Male	Senior Teacher	1215	Male	HOD	5
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40	<p>A binary file "Employee.dat" has structure [EmpNo,EmpName, Designation, Salary].</p> <p>i. Write a user defined function CreateFile() to input data for a record and add to Book.dat .</p> <p>ii. Write a function CountRec(Designation) in Python which accepts the Designation as parameter and count and return number of employees by the given Designation are stored in the binary file "Employee.dat"</p> <p style="text-align: center;">OR</p> <p>A binary file "Employee.dat" has structure [EmpNo, EmpName, Designation, Salary]. Write a function countrec() in Python that would read contents of the file "Emp.dat" and display the details of those employees whose salary is above 25000. Also display number of employees who are getting salary above 25000.</p>	5																																																																								