

**KENDRIYA VIDYALAYA SANGATHAN, JAIPUR REGION**

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

**2<sup>nd</sup> Pre Board Examination**

**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

<b>Part A</b>		
<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 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	Given T=(10,20,30,40). Which of the following statement is incorrect: a) print(max(T)) b) print(T[2]) c) T[3] = -40 d) print(len(T))	1
8	Name the built-in mathematical function / method that is used to return square root of a number.	1
9	Name the protocol that is used to transfer file from one computer to another.	1
10	Your friend Sunita complains 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
<b>Part A</b>		
<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	Model Public School is maintaining fees records of students. The database administrator decided that- <ul style="list-style-type: none"> <li>• Name of the database -School</li> <li>• Name of the table – Fees</li> <li>• The attributes of Fees are as follows: <ul style="list-style-type: none"> <li>Rollno - numeric</li> <li>Name – character of size 20</li> <li>Class - character of size 20</li> <li>Fees – Numeric</li> </ul> </li> </ul>	1x4 =4

	<p style="text-align: center;">Qtr – Numeric</p> <p>Answer any four from the following questions:</p> <p>(i) Identify the attribute best suitable to be declared as a primary key</p> <p>(ii) Write the degree of the table.</p> <p>(iii) Insert the following data into the attributes Rollno, Name, Class, Fees and Qtr in fees table.</p> <p>(iv) database administrator want to remove the table Fees table from the database School.</p> <p style="padding-left: 40px;">Which command will he use from the following:</p> <p style="padding-left: 80px;">a) DELETE FROM Fees;</p> <p style="padding-left: 80px;">b) DROP TABLE Fees;</p> <p style="padding-left: 80px;">c) DROP DATABASE Fees;</p> <p style="padding-left: 80px;">d) DELETE Fees FROM Fees;</p> <p>(v) Now database administrator 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.</p>	
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 _____ <b># Line 1</b>  def S NAMES():     with open(_____) as csvfile: <b># Line 2</b>         myreader = csv._____(csvfile, delimiter=',') <b># Line 3</b> 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) </pre> <p>a. Name the module he should import in Line 1</p> <p>b. In which mode, Priti should open the file to print data.</p> <p>c. Fill in the blank in Line 2 to open the file.</p> <p>d. Fill in the blank in Line3 to read the data from a csv file.</p> <p>e. Write the output he will obtain while executing the above program.</p>	1x4 =4

<b>Part B (Section I)</b>		
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.  <b>OR</b> Differentiate between Website and webpage. Write any two popular example of online shopping.	2
26	What is the difference between local and a global variable? Explain with the help of a suitable example.	2
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  <b>OR</b> 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]; 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#	2
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	What will be the output of following program:	2

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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)

```

**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]

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

**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

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

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

- To display all information about teachers of Female PGT Teachers.
- To list names, departments and date of hiring of all the teachers in descending order of date of joining.
- To count the number of teachers and sum of their salary department wise.

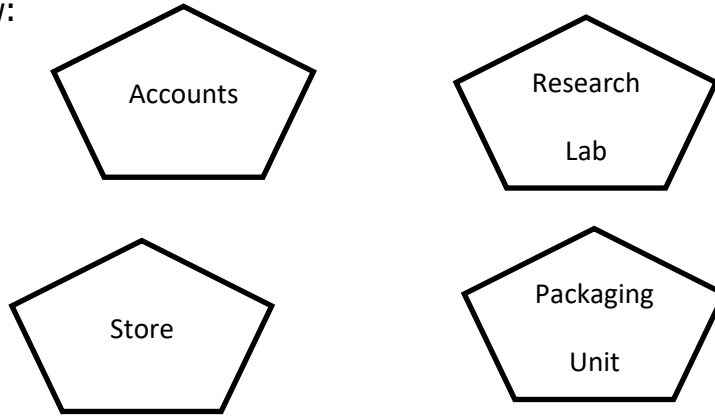
37 Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.  
**OR**  
 Write a function in Python POP(Arr),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

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**Part B Section III**

38 MS Center has set up its new center in Delhi. It has four buildings as shown in the diagram given below:

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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.

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

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**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	Sahil Bansal	35000	3	333
105	Neha Soni	25000	7	444
106	Sonal Aggarwal	20000	5	333
107	Arjun Singh	50000	14	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].  
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"

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**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%

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