

केंद्रीय विद्यालय संगठन, अहमदाबाद संभाग
KENDRIYA VIDYALAYA SANGATHAN, AHMEDABAD REGION

SET-2/A

प्री-बोर्ड परीक्षा: 2024-25

PRE-BOARD EXAMINATION: 2024-25

SUBJECT : Computer Science (083)
 CLASS : XII

TIME : 3 HOURS
 MM : 70

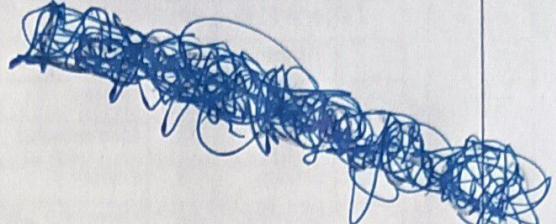
सामान्यनिर्देश/GENERAL INSTRUCTIONS:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

Q.NO	SECTION-A (21 X 1= 21 Marks)	MARKS
1	State True or False. "Comments are not executed by interpreter."	1
2	What will the output be from the following code? <code>print("Welcome" + 2 + "Ahmedabad"+ "Gujarat")</code> (a) Welcome2AhmedabadGujarat (b) TypeError (c) "Welcome2 AhmedabadGujarat" (d) ValueError	1
3	Which of the following is valid logical operator in Python: (a) > (b) and (c) ** (d) OR	1
4	Find the output of the following:- <code>x= "India is a largest democracy in the World"</code> <code>print (x[2:3],x[-3:-4])</code>	1
5	Write the valid identifier in the following: (a) My.File (b) My-File (c) 2num (d) For	1
6	What is the output when following code is executed ? <code>Mytuple = 10, 20</code> <code>Mytuple*2</code> (a) (20, 40) (b) (10, 20, 10, 20) (c) (10,10,20,20) (d) Error	1
7	Given the following dictionary <code>Day={1:"Monday",2:"Tuesday",3:"Wednesday"}</code> Which statement will	1

21	Assertion (A): Drop and delete both are DDL commands. Reasoning (R): Drop is used to delete table and delete is used to remove tuples.	1
Q.NO	SECTION-B (7 X 2 = 14 Marks)	MARKS
	What will be the output of the following code? X = [5,10,15,1] G = 4 def Change(X): global G N=len(X) for i in range(N): X[i] += G Change(L) for i in L: print(i,end='\$')	2
22	Give two examples of each of the following:	2
23	(i) Identity operator (ii) Membership operator	2
	Write a suitable Python statement for each of the following tasks using built-in functions/methods only: (i) To delete an element Mumbai:50 from Dictionary D. (ii) To display words in a string S in the form of a list OR Write a Python Program/statements to display characters of a string from S. For example, if S="Computer Science" (i)The output should be 'Cmue cec' (alternate character) (ii) The output should be 'ecneicS retupmoC' (reverse order)	2
24	What will be the output of the following code? What is minimum and maximum value of x ? import random List=["Delhi","Mumbai","Chennai","Kolkata"] for y in range(4): x = random.randint(1,3) print(List[x],end="#") a. Delhi#Mumbai#Chennai#Kolkata# b. Mumbai#Chennai#Kolkata#Mumbai# c. Mumbai# Mumbai #Mumbai # Delhi# d. Mumbai# Mumbai #Chennai # Mumbai	2
25	Rewrite the following code in Python after removing all the syntax errors. Underline each correction done in the code. num1, num2 = 10, 45 while num1 % num2 == 0: num1+= 20	2
26		

	<pre> num2+= 30 Else: print('hello') </pre>	
27	<p>(i) A) What constraint should be applied on a table column so that duplicate values and NULL are not allowed in that column OR B) Write command to display list of databases.</p> <p>(ii) A) Write an SQL command to add gender column in emp table with "F" as default constraint OR B) Write an SQL command to make the column STD_ID as Primary Key of STUDENT table.</p>	2
28	<p>Write two advantages and two disadvantages of circuit switching. OR Differentiate between Web server and web browser. Write the names of any two web browsers.</p>	2
Q.NO		SECTION- C (3 X 3= 9 Marks)
29	<p>A) Write a Python function COUNT() that displays all the words containing "KVS" from a text file "temp.txt". OR B) Write a Python function DISPLAY() that finds and displays all the words longer than 7 characters from a text file "book.txt".</p>	3
30	<p>Renu has created a dictionary containing names and marks as key value pairs of 6 students. Write a program, with separate user defined functions to perform the following operations:</p> <ul style="list-style-type: none"> Push the keys (name of the student) of the dictionary into a stack, where the corresponding value (marks) is greater than 75. Pop and display the content of the stack. <p>For example: If the sample content of the dictionary is as follows: R={"OM":76, "JAI":45, "ARYA":89, "ALI":65, "ANU":90, "TOM":82} The output from the program should be: TOM ANU ARYA OM</p> <p>OR</p> <p>Akshat has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list.</p> <ul style="list-style-type: none"> Traverse the content of the list and push the even numbers into a stack. Pop and display the content of the stack. <p>For Example: If the sample Content of the list is as follows: N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38] Sample Output of the code should be: 38 22 98 56 34 12</p>	

31	<p>Predict the output of the code given below :</p> <pre> text="LearningCS" L=len(text) 70 ntext="" for i in range (0,L): if text[i].islower(): ntext=ntext+text[i].upper() elif text [i].isalnum(): ntext=ntext+text[i] else: ntext=ntext+'@@' print(ntext) </pre>  <p>OR</p> <pre> L = [5,10,15,1] G = 4 def Change(X): global G N=len(X) = 4 for i in range(N): range(0,4) X[i] += G 5 + 4 [9,14,19,5] Change(L) for i in L: print(i,end='\$') </pre> <p>$\\$ \\$ 14 \\$ 19 \\$ 5 \\$</p> <p>(1 Mark of each correct three characters)</p>	3
----	---	---

Q.NO	SECTION- D (4 X 4= 16 Marks)					MARKS																																			
32	<p>Given the Table TRAINER</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TID</th> <th>TNAME</th> <th>CITY</th> <th>HIREDATE</th> <th>SALARY</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>SUNAINA</td> <td>MUMBAI</td> <td>1998-10-15</td> <td>90000</td> </tr> <tr> <td>102</td> <td>ANAMIKA</td> <td>DELHI</td> <td>1994-12-24</td> <td>80000</td> </tr> <tr> <td>103</td> <td>DEEPTI</td> <td>CHANDIGARH</td> <td>2001-12-21</td> <td>82000</td> </tr> <tr> <td>104</td> <td>MEENAKSHI</td> <td>DELHI</td> <td>2002-12-25</td> <td>78000</td> </tr> <tr> <td>105</td> <td>RICHA</td> <td>MUMBAI</td> <td>1996-01-12</td> <td>95000</td> </tr> <tr> <td>106</td> <td>MANIPRABHA</td> <td>CHENNAI</td> <td>2001-12-12</td> <td>69000</td> </tr> </tbody> </table> <p>(a) Write the query to:</p> <ul style="list-style-type: none"> (i) Insert a record: (107,Bhoomi,Delhi,2001-12-15,90000) (ii) Increase the salary by 1% for the trainers whose salary is more than 80000 (iii) Delete the record of Richa (iv) Add a new column remarks of VARCHAR type with 50 					TID	TNAME	CITY	HIREDATE	SALARY	101	SUNAINA	MUMBAI	1998-10-15	90000	102	ANAMIKA	DELHI	1994-12-24	80000	103	DEEPTI	CHANDIGARH	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	4
TID	TNAME	CITY	HIREDATE	SALARY																																					
101	SUNAINA	MUMBAI	1998-10-15	90000																																					
102	ANAMIKA	DELHI	1994-12-24	80000																																					
103	DEEPTI	CHANDIGARH	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																																					

characters.

OR

(b) Write a output of following query :

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

- (i) SELECT Department, count(*) FROM Teacher GROUP BY Department having department='Histroy';
- (ii) SELECT Max(Date_of_Join),Min(Date_of_Join) FROM Teacher;
- (iii) SELECT Name , age FROM Teacher where Name like '_a%';
- (iv) SELECT Gender, COUNT(Gender) FROM Teacher GROUP BY Gender;

- 33** Explain the importance of CSV file in file handling.
Write a Program in Python that defines and calls the following user defined functions:
a) ADDITION() – To accept and add data of an staff to a CSV file 'info.csv'. Each record consists of a list with field elements as empid, name and salary to store employee id, employee name and employee salary respectively.
b) COUNT() – To count the number of records present in the CSV file named 'info.csv'.

4

- 34** Name of the 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

- (i) Write command to insert following data in the table:
ECode = 80015, Ename = "Allen" Desig = 'Admin' Remn = 43000
- (ii) Write SQL statement to delete the record of Jeevan from the table HRDATA.
- (iii) Write SQL statement to increase the Remn of all the employees by 10 percent.
- iv) (a) Add a column City in the table with datatype as varchar with 20

4

character

OR

(b) Delete column desig of table HRDATA.

35

A table, named ITEM, in ITEMDB database, has the following structure:

itemNo int(11), itemName varchar(15), price float, qty int(11)

Write the following Python function to perform the specified operation:

Display(): To input details of an item and store it in the table ITEM. The function should then retrieve and display all records from the ITEM table where the Price is greater than 75.

Assume the following for Python-Database connectivity:

Host: localhost, User: root, Password: kvs

Q.NO

SECTION- E (2 X 5= 10 Marks)

MARKS

36

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"

ECE

37

Karnavati Design and Training Institute is setting up its center in Jaipur with four specialized units for Design, Media, HR and Training in separate buildings. The physical distances between these units and the number of computers to be installed in these units are given as follows. You as a network expert, have to answer the queries as raised by the administrator as given in (i) to (v).

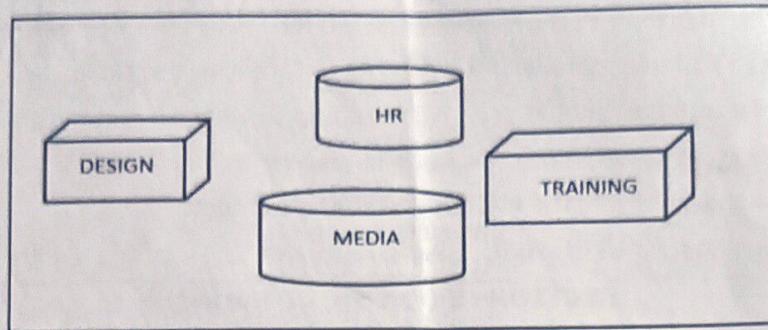
Design

Shortest distances between various locations in meters :

Design Unit to Media Unit	60
Design Unit to HR Unit	40
Design Unit to Training Unit	60
Media Unit to Training Unit	100
Media Unit to HR Unit	50
Training Unit to HR Unit	60

Number of computers installed at various locations are as follows:

Design Unit	40
Media Unit	50
HR Unit	110
Training Unit	40



- a) Suggest the most suitable place (i.e., Unit/Building) to install the server of this Institute with justification.
 - b) Suggest an ideal layout for connecting these Unit/Building for a wired connectivity.
 - c) Suggest the devices to be installed in each of these buildings for connecting computers installed within each of the units out of the following :
Modem, Switch, Gateway, Router
 - d) Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable :
Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.
 - e) The institute is planning to connect its admission office in Bangalore, which is 1960km from institute. Which type of network out of LAN, MAN or WAN will be formed ? Justify your answer.
- OR**
- e) Difference between PAN and LAN