

Roll No.

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Candidates must write the Set No. on the title page of the answer book.

SAHODAYA PRE-BOARD EXAMINATION (2023-24)

- Please check that this question paper contains 15 printed pages.
- Set number given on the right hand side of the question paper should be written on the title page of the answer book by the candidate.
- Check that this question paper contains 35 questions.
- Write down the Serial Number of the question in the left side of the margin before attempting it.
- 15 minutes time has been allotted to read this question paper. The question paper will be distributed 15 minutes prior to the commencement of the examination. The students will read the question paper only and will not write any answer on the answer script during this period. Students should not write anything in the question paper.

CLASS- XII

SUB : COMPUTER SCIENCE (083)

Time Allowed: 3 hours**Maximum Marks: 70****General Instructions :-**

1. Please check this question paper contains 35 questions.
2. All questions are compulsory.
3. This question paper is divided into 5 sections- A, B, C, D and E.
4. Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
5. Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
6. Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
7. Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
8. Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
9. All programming questions are to be answered using Python Language only.

SECTION-A

1.	Which of the following is an invalid identifier in Python? (a) 2ndclass (b) NONE (c) FLOAT (d) Income_Tax	1
2.	What is the output of the following code? T=(200) print(T*2) (a) (200,200) (b) Error (c) 400 (d) [200,200]	1
3.	What will be the output of the following statement? print (int("4"+"9")+10) (a) 23 (b) "4910" (c) "23" (d) 59	1
4.	Which out of the following Network devices is used to connect dissimilar networks (different protocols)? (a) Hub (b) Router (c) Bridge (d) Gateway	1
5.	Fill in the blank: The _____ statement when combined with table name returns the structure of the table. (a) DESC (b) UNIQUE (c) DISTINCT (d) NULL	1
6.	Given a Tuple tup1= (10, 20, 30, 40, 50, 60, 70, 80, 90) What will be the output of print (tup1 [3:7:2])? (a) (40,50,60,70,80) (b) (40,50,60,70) (c) [40,60] (d) (40,60)	1
7.	State whether the following statement is True or False: While writing a program all exceptions must be handled as the system cannot handle Exceptions on it's own.	1

8.	<p>What will be the output of the following code?</p> <pre>L1, L2 = [10, 15, 20, 25], [] for i in range(len(L1)) : L2. insert(i,L1.pop()) print (L1, L2,sep="&")</pre> <p>(a) []&[25, 20, 15, 10] (b) [10, 15, 20, 25]&[25, 20, 15, 10] (c) [10, 15, 20, 25]&[10, 15, 20, 25] (d) [25, 20, 15, 10]&[]</p>	1
9.	<p>Fill in the blank: _____ command is used to remove a column from a table in SQL.</p> <p>(a) update (b) remove (c) alter (d) delete</p>	1
10.	<p>Select the correct output of the code:</p> <pre>quote= "Mission Chandrayan-3" a=quote.split("a") print(a[0],"++",a[3])</pre> <p>(a) Mission Ch+++3 (b) Mission Ch++ ndrayan-3 (c) Mission Ch++ yan-3 (d) Mission Ch ++ n-3</p>	1
11.	<p>Which of the following network devices amplify the incoming signal and forwards it in LAN?</p> <p>(a) Repeater (b) Gateway (c) Router (d) Modem</p>	1
12.	<p>Select the correct output of the code:</p> <pre>str="computer is fun" p=len(str) substr="fun" print(str.find(substr, 0, p))</pre> <p>(a) 13 (b) 12 (c) -1 (d) 0</p>	1

	Reason (R) : The information is organized with one record on each line and each field is separated by comma.	
SECTION-B		
19.	<p>Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.</p> <pre>value=30 for res in range(0, value) If res%4==0: print(res*4) elseif res%5==0: print(res+3) else: print(res+10)</pre>	2
20.	<p>(a) Expand the following terms: IMAP, GSM</p> <p>(b) Give one difference between LAN and WAN.</p> <p style="text-align: center;">OR</p> <p>(a) Define the term Telnet with respect to networks</p> <p>(b) How is server different from client?</p>	2
21.	<p>(a) Given is a Python string declaration: myexam="Aditya-L1" Write the output of: print(myexam[4 : -4])</p> <p>(b) Write the output of the code given below: my_dict = {"name": "Aman", "age": 26} my_dict['age']=27 my_dict['address'] = "Delhi" print(my_dict.items())</p>	1+1=2
22.	Arjun has created a table SMS containing SRoll_no, Sname, SClass, SPhone_no and percent. Later, he realizes that the field Sphone_no may	2

	<p>have duplicate values. Help him to write a SQL command to set the property of this field to deny duplicate values. Also he needs help to write SQL command to see the structural detail of the table SMS.</p> <p style="text-align: center;">OR</p> <p>Ms. Trisha of a software company created a table Clients under a database Company. After creating table, she now wants to add an additional column CPortfolio to store textual information containing maximum of 100 characters and that can't be blank. Also she wants to view all the tables present under the database Company. Help her to write the SQL commands to complete the above tasks.</p>	
23.	<p>Predict the output of the Python code given below:</p> <pre>def fun(s): 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) fun('Gini%Jony')</pre> <p style="text-align: center;">OR</p> <p>Predict the output of the Python code given below:</p> <pre>def fun(): frequency = { } list = ['a','b','c','a','c'] for index in list: if index in frequency: frequency[index]+=1 else:</pre>	2

	<pre> frequency[index]=1 print(len(frequency)) print(frequency) fun() </pre>											
24.	<p>Write the Python statement for each of the following tasks using BUILT-IN functions/methods only:</p> <p>(a) Sort the elements of a tuple Tup in ascending order.</p> <p>(b) Remove an element present at index 3 of a List Li.</p> <p style="text-align: center;">OR</p> <p>(a) Convert the input to the type of element as entered.</p> <p>(b) Find the total of values in a list of integers.</p>	2										
25.	<p>Write the output of the following code snippet.</p> <pre> V=70 def display(N): global V V=35 if N%9==0: V=V*N else: V=V/N print(V, end="*") display(15) print(int(V)) </pre>	2										
SECTION-C												
26.	<p>(a) Refer the tables given below:</p> <p style="text-align: center;">Table: Book</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Code</th> <th>Sub</th> </tr> </thead> <tbody> <tr> <td>B1</td> <td>English</td> </tr> <tr> <td>B2</td> <td>Physics</td> </tr> <tr> <td>B3</td> <td>History</td> </tr> <tr> <td>B4</td> <td>Science</td> </tr> </tbody> </table>	Code	Sub	B1	English	B2	Physics	B3	History	B4	Science	3
Code	Sub											
B1	English											
B2	Physics											
B3	History											
B4	Science											

Table B: Stock

SCode	Pub	Qty	Code
P01	Gyan Chand	250	B1
P02	Pustak House	340	B2
P03	Arora	470	B3
P04	Sonka	245	B5

Predict the output for the following query:

SELECT * FROM Book NATURAL JOIN Stock ;

- (b) Consider the following tables WORKER and PAYLEVEL and write the output of the following SQL queries (i) to (iv) .

Table : WORKER

ECODE	NAME	DESIGN	PLEVEL	DOJ	DOB
11	Radhe Shyam	Supervisor	P001	13-Sep-2004	23-Aug- 1981
12	Chander Nath	Operator	P003	22-Feb-2010	12-Jul-1987
13	Fizza	Operator	P003	14-Jun-2004	14-Oct-1983
15	Ameen Ahmed	Machanic	P002	21-Aug- 2006	13-Mar-1984
18	Sanya	Clerk	P002	19-Dec-2005	09-Jun-1987

Table: PAYLEVEL

PLEVEL	PAY	ALLOWANCE
P001	26000	12000
P002	22000	10000
P003	12000	600

- (i) SELECT COUNT(PLEVEL), PLEVEL FROM WORKER
GROUP BY PLEVEL;
- (ii) SELECT MAX (DOB), MIN(DOJ) FROM WORKER;
- (iii) SELECT NAME, PAY FROM WORKER W, PAYLEVEL P
WHERE W. PLEVEL= P. PLEVEL AND W.ECODE <13;
- (iv) SELECT PLEVEL, PAY+ALLOWANCE FROM PAYLEVEL
WHERE PLEVEL= 'P003';

27.

(a) Write the outputs of the SQL queries (i) to (iv) based on the relations **PRODUCT** and **ORDER**.

2+1=3

Table: PRODUCT

PID	BRAND	CITY_STORE	PNAME	PRICE
111	SONY	DELHI	TV	70000
222	NOKIA	MUMBAI	MOBILE	50000
333	ONIDA	DELHI	TV	30000
444	SONY	MUMBAI	MOBILE	35000
555	BLACKBERRY	CHENNAI	MOBILE	25000
666	DELL	DELHI	LAPTOP	20000

Table: ORDER

CID	CNAME	QTY	PID
101	ROHAN SHARMA	20	222
102	DEEPAK KUMAR	10	666
103	MOHAN KUMAR	5	111
104	SAHIL BANSAL	3	333
105	NEHA SONI	7	444
106	SONAL AGARWAL	5	333
107	ARUN SINGH	15	666

- (i) `SELECT COUNT(*) , CITY_STORE FROM PRODUCT GROUP BY CITY_STORE;`
- (ii) `SELECT AVG(QTY) FROM ORDER WHERE CNAME LIKE "%R%";`
- (iii) `SELECT CNAME, BRAND FROM PRODUCT, ORDER WHERE PRODUCT.PID = ORDER.PID AND PNAME= "MOBILE";`
- (iv) `SELECT CNAME, QTY FROM ORDER WHERE QTY NOT BETWEEN 5 AND 20;`
- (c) Write an SQL command to view all the Tables present in a database named 'SCHOOL';

28.

Write a function `RevText()` to read a text file " Story.txt " and Print the word(s) starting with 'I' in reverse order, rest of the words will be printed as it is.

3

	<p>Example: If content of the text file is: INDIA IS MY COUNTRY Output will be: AIDNI SI MY COUNTRY</p> <p style="text-align: center;">OR</p> <p>Write a function <code>country()</code> in Python to read the text file “Data.txt” and count the number of times “my” or “My” occurs in the file.</p> <p>For example if the file “Data.txt” contains:</p> <p>“This is my website. I have displayed my preferences in the CHOICE section.”</p> <p>The <code>country()</code> function should display the output as:</p> <p>my occurs 2 times.</p>																									
29.	<p>Observe the following table and answer the parts (a) to (c):</p> <p style="text-align: center;">Table: Store</p> <table border="1" data-bbox="395 831 1169 1167"> <thead> <tr> <th>ItemCode</th> <th>ItemName</th> <th>Qty</th> <th>Rate</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>Gel Pen Classic</td> <td>1150</td> <td>25</td> </tr> <tr> <td>11</td> <td>Sharpner</td> <td>1500</td> <td>10</td> </tr> <tr> <td>12</td> <td>Ball Pen 0.5</td> <td>1600</td> <td>12</td> </tr> <tr> <td>13</td> <td>Eraser</td> <td>1600</td> <td>5</td> </tr> <tr> <td>15</td> <td>Ball Pen 0.25</td> <td>800</td> <td>20</td> </tr> </tbody> </table> <p>(a) Identify the most appropriate column, which can be considered as Primary key of the Table Store.</p> <p>(b) If three columns are added and one row is deleted from the table Store, then what will be the new degree and cardinality of the above table?</p> <p>(c) Write an SQL statement to delete the record(s) of item having Rate less than 10.</p>	ItemCode	ItemName	Qty	Rate	10	Gel Pen Classic	1150	25	11	Sharpner	1500	10	12	Ball Pen 0.5	1600	12	13	Eraser	1600	5	15	Ball Pen 0.25	800	20	3
ItemCode	ItemName	Qty	Rate																							
10	Gel Pen Classic	1150	25																							
11	Sharpner	1500	10																							
12	Ball Pen 0.5	1600	12																							
13	Eraser	1600	5																							
15	Ball Pen 0.25	800	20																							
30.	<p>Mayank has created a dictionary containing names and marks as key value pairs of 6 students. Write a function in Python <code>PushName(S)</code> to Push the keys (name of the student) of the dictionary <code>S</code> into a stack, where the corresponding value (marks) is greater than 75.</p> <p>Also write a function <code>POP(S)</code> to delete an element from the stack <code>S</code> and check for underflow in it.</p> <p>For example: If the sample content of the dictionary is as follows</p>	3																								

S={"OM":66, "JAI":45, "BOB":95, "ALI":65, "ANU":90, "TOM":82}

The stack after invoking PushName(S) should contain

TOM

ANU

BOB

The stack after invoking POP(S) contain

ANU

BOB

SECTION-D

31. Consider the following tables ITEM and CUSTOMER, write SQL commands for the statements (a) to (d) 1*4=4

TABLE: ITEM

I_ID	Item_Name	Manufacturer	Price
PC01	Personal Computer	ABC	35000
LC05	Laptop	ABC	55000
PC03	Personal Computer	XYZ	32000
PC06	Personal Computer	MNO	37000
LC03	Laptop	PQR	57000

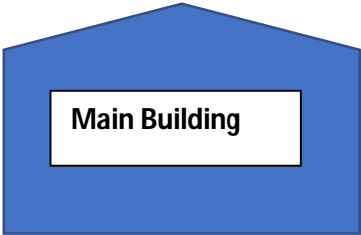



TABLE: CUSTOMER

C_ID	Customer_Name	City	I_ID
01	N Roy	Delhi	LC03
06	H Singh	Mumbai	PC03
12	R Pandey	Delhi	PC06
15	C Sharma	Delhi	LC03
16	K Agrawal	Bangalore	PC01

- (a) To display the details of those Customers whose city is Delhi in the descending order of Customer_Name.
- (b) To display the details of Items whose Price is not in the range of 35000 to 55000 (Both values included).

	<p>(c) To display the Customer_Name, City from table CUSTOMER and Item_Name and Price from table ITEM, with their corresponding matching I_ID.</p> <p>(d) To increase the Price of all items by 1000 in the table ITEM.</p>	
32.	<p>Manish is a Python programmer working in a School. For the Result analysis in School, he has created a csv file named student.csv, to store the results of students in different Exams. The structure of record of file student.csv is [RollNo, Name, Percentage] where, RollNo is the Roll Number of student (integer), Name is the Student Name (string) and Percentage is the percentage of marks secured by the student (float).</p> <p>For efficiently maintaining data of the Result analysis, Manish wants to write the following user defined functions.</p> <p>(a) ADD() – To accept and add data of students to a CSV file ‘student.csv’.</p> <p>(b) Display() – To read all content of “student.csv” and display records of only those students who scored more than 90 percentage.</p>	4

SECTION-E

33.	<p>“Sikshya for All” is an educational NGO. It is setting up its new campus at Jaipur for its web-based activities. The campus has four buildings as shown in the diagram below:</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around; align-items: center;"> <div style="text-align: center; margin: 10px;">  <p>Main Building</p> </div> <div style="text-align: center; margin: 10px;">  <p>Resource Building</p> </div> <div style="text-align: center; margin: 10px;">  <p>Training Building</p> </div> <div style="text-align: center; margin: 10px;">  <p>Accounts Building</p> </div> </div>	1*5=5
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	<ul style="list-style-type: none"> ▪ Bus Number ▪ Bus Starting Point ▪ Bus Destination <p style="text-align: center;">OR</p> <p>(a) Write any two differences between 'rb' and 'ab' modes w.r.t. Binary files.</p> <p>(b) A binary file "salary.dat" has structure [employee id, employee name, salary]. Write a function CountRec() in Python that would read contents of the file "salary.dat" and display the details of those employee whose salary is above 20000.</p>	
35.	<p>(a) Define the term Cardinality with respect to RDBMS.</p> <p>(b) A company has stored the data of its employees in emp Table. The management of the company has decided to increase the salary by 20% of all those employees who belong to the IT Department. As a Software programmer. Help the management by writing the following missing statements 1-4 to complete the code:</p> <pre>import mysql.connector as mycon mydb= _____ #Statement 1 mycursor= _____ #Statement 2 mycursor.execute (_____) #Statement 3 mydb. _____ #Statement 4</pre> <p>Statement 1 - To form the database connection object.</p> <p>Statement 2 - To form the cursor object.</p> <p>Statement 3 - To execute the command that will increase the salary by 20% of all those employees who belong to the IT Department.</p> <p>Statement 4 - To make the changes after deletion of record permanently in the database.</p> <p>Note: The connection object parameters are localhost, user name is root and password is 1234 and database name is Company.</p>	1+4=5

OR

- (a) Define the term degree with respect to RDBMS.
- (b) The code given below intends to delete a record from the table 'Employee' available in the database 'Company', whose 'Dept' is 'Elect' and Grade is 'G4'. Write the following missing statements 1-4 to complete the code:

```
import mysql.connector as mycon
```

```
mydb= _____ #Statement 1
```

```
mycursor= _____ #Statement 2
```

```
mycursor.execute ( _____ ) #Statement 3
```

```
mydb. _____ #Statement 4
```

Statement 1 - To form the database connection object.

Statement 2 - To form the cursor object

Statement 3 - To execute the command that will delete the desired record from the table 'Employee'.

Statement 4 - To make the changes after deletion of record permanently in the database.

Note: The connection object parameters are localhost, user name is root and password is 1234.