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PRE-BOARD-I EXAMINATION 2023-2024
CLASS XII-COMPUTER SCIENCE (083)

TIME: 03 HOURS   **M.M.: 70**

General Instructions:
1. **This question paper contains five sections, Section A to E.**
2. **All questions are compulsory.**
3. **Section A has 18 questions carrying 01mark each.**
4. **Section B has 07 Very Short Answer type questions carrying 02 marks each.**
5. **Section C has 05 Short Answer type questions carrying 03 marks each.**
6. **Section D has 02 Long Answer type questions carrying 04 marks each.**
7. **Section E has 03 questions carrying 05 marks each.**
8. **All programming questions are to be answered using Python Language only.**

	SECTION A	
1.	Assign a tuple containing an Integer?	(1)
2.	Which of the following data type in Python supports concatenation? a) int b) float c) bool d) str	(1)

3.	What will be output of the following code:
	     d1={1:2,3:4,5:6}
	     d2=d1.popitem()
	     print(d2)
	     a){1:2} b){5:6} c)(1,2) d)(5,6)
		(1)

4.	The correct output of the given expression is: True and not False or False (a)False (b)True(c)None (d) Null	(1)

5.	Fill in the blank:
	            _____ Command is used to add a new column in a table in SQL.
	     a)update b)remove c)alter d)drop
		(1)

6.	Consider the Python statement: f.seek(10, 1) Choose the correct statement from the following: (a) File pointer will move10 byte in forward direction from beginning of the file (b) File pointer will move 10 byte in forwarddirection from end of the file (c) File pointer will move 10 byte inforwarddirection from current location (d) File pointer will move 10 byte in backward direction from current location	(1)

7.	Choose correct SQL query which is expected to delete all rows of a table emp without deleting its structure.
	     a) DELETE TABLE;
	     b) DROP TABLE emp;
	     c) REMOVE TABL emp;
	     d) DELETE FROM emp;
		(1)

8.	Which of the following is NOT a DML Command? (a)Insert (b)Update (c)Drop (d)Delete	(1)

9.	Select the correct outpu to the code:
	      a="Year2022atallthe best"
	      a=a.split('a')
	      b=a[0]+"-"+a[1]+"-"+a[3]
	      print (b)
	
	  a) Year–0-atAllthebest
	  b) Ye-r2022-llthe best
	  c) Year–022-at Allthebest
	  d) Year–0-atallthebest
		(1)

10.	Which of the following statement(s) would give an error during execution? S="Lucknow is the Capital of UP " #Statement1 print(S) #Statement2 S[4]='$' #Statement3 S="Thankyou" #Statement4 S=S+"Thankyou" #Statement5 (a)Statement3 (b)Statement4 (c)Statement5 (d)Statement4and5	
11.	Which of the following function returns a list datatype? a) d=f.read() b) d=f.read(10) c) d=f.readline() d)d=f.readlines()	(1)

12.	Select the correct statement,with reference to SQL:
	    a) Aggregate functions ignore NULL
	    b) Aggregate functions consider NULL as zero or False
	    c) Aggregate functions treat NULL as a blank string
	    d) NULL can be written as 'NULL' also.
		(1)

13.	Fill in the blank: The _____is a mail protocol used to retrieve mail from a remote server to a local email client. (a)VoIP (b) FTP (c)POP3 (d)HTTP	(1)
14.	What will be the value of y when following expression be evaluated in Python? x=10.0 y=(x<100.0) and x>=10 (a)110 (b)False (c)Error (d)True	(1)
15.	All aggregate functions except _____ignore null values in their input collection. (a) Count(attribute) (b) Count(*) (c) Avg (d) Sum	(1)
16.	Which of the following method is used to create a connection between the MySQL database and Python? a) (a) connector ( ) (b) connect ( ) (c) con ( ) (d)cont()	(1)

	Q 17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as a) Both A and R are true and R is the correct explanation for A b) Both A and R are true and R is not the correct explanation for c) A is True but R is False d) A is false but R is True	
17.	Assertion (A):-The default arguments can be skipped in the function call. Reason (R):-The function argument will take the default values even if the values are supplied in the function call	(1)
18.	Assertion(A):A tuple can be concatenated to a list,but a list cannot be concatenated to a tuple. Reason(R):Lists are mutable and tuples are immutable in Python.	(1)

SECTION B

19.	Ravi has written a function to print Fibonacci series for first 10 element. His code is having errors. Rewrite the correct code and underline the corrections made. Some initial elements of Fibonacci series are:
	
	def fibonacci()
	   first=0
	   second=1
	   print(("first no. is ", first)
	   print("secondno.is,second)
	  for a in range (1,9):
	     third=first+second
	     print(third)
	     first,second=second,third
	     fibonacci()
		(2)

20.	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 FROM and TO. import random AR=[20,30,40,50,60,70] FROM=random.randint(1,3) TO=random.randint(2,4) for K in range(FROM,TO+1): print(AR[K],end="#") (i)10#40#70# (ii)30#40#50# (iii)50#60#70# (iv)40#50#70#	(2)

21.	(a) Given is a Python string declaration:
	   myexam="RussiaUkrain"
	   Write the output of :
	   print(myexam[-2:2:-2])
	
	(b) Write the output of the code given below:
	   D1={"sname":"Aman","age":26}
	   D1['age']=27
	   D1['address']="Delhi"
	   print(D1.items())
		(1)
		
		(1)

22.	Explain the use of 'Foreign Key' in a Relational Database. Give an example to support your answer.	(2)
23.	(a) Write the full forms of the following: (i) POP (ii)HTTPS (b) Write two points of difference between Circuit Switching and Packet Switching	(1) (1)

24.	Predict the output of the Python code given below:
	
	``python
	value = 50
	def display(N):
	        global value
	        value = 25
	        if N%7==0:
	            value=value+N
	        else:
	            value=value-N
	print(value, end="#")
	display(20)
	print(value)
	``
	
	 OR
	
	``python
	def Display(str):
	   m=""
	   for i in range(0,len(str)):
	     if(str[i].isupper()):
	       m=m+str[i].lower()
	     elif str[i].islower():
	       m=m+str[i].upper()
	     else:
	       if i%2==0:
	         m=m+str[i-1]
	       else:
	         m=m+"#"
	print(m)
	Display('Fun@World2.0')
	``
		(2)

25.	Consider the following two commands with reference to a table, named Students, having a column named Section:	(2)
	(a) Select count(Section)from Students;	
	(b) Select count(*)from Students;	
	If these two commands are producing different results,	
	(i) What may be the possible reason?	
	(ii) Which command,(a)or(b),might be giving higher value?	
	OR	
	Name the aggregate functions which work only with numeric data, and those that work with any type of data.	

SECTION C

26.	(a)Consider the following tables– EMPLOYEES AND DEPARTMENT	(1)

TABLE : EMPLOYEES

ENO	ENAME	DOJ	DNO
E1	NUSRAT	2001-11-21	D3
E2	KABIR	2005-10-25	D1

TABLE : DEPARTMENT

DNO	DNAME
D1	ACCOUNTS
D2	HR
D3	ADMIN

What will be the output of the following statement?
SELECT ENAME, DNAME FROM EMPLOYEES,DEPARTMENT WHERE
EMPLOYEE.DNO=DEPARTMENT.DNO;

(2)

b)Write the output of the queries(i)to(iv) based on the tables given below

Table: ITEM

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

Table: CUSTOMER

C_ID	CName	City	ID
01	N Roy	Delhi	LC03
06	R Singh	Mumbai	PC03
12	R Pandey	Delhi	PC06
15	C Sharma	Delhi	LC03
16	K Agarwal	Bangalore	PC01

i) SELECT ITEM_NAME, MAX(PRICE), COUNT(*) FROM ITEM GROUP BY
ITEM_NAME;
ii) SELECT CNAME,MANUFACTURER FROM ITEM,CUSTOMER WHERE
ITEM.ID=CUSTOMER.ID;
iii) SELECT ITEM_NAME, PRICE*100 FROM ITEM WHERE
MANUFACTURER="ABC";
(iv) SELECT DISTINCT CITY FROM CUSTOMER;

27.	Write a method SHOWLINES() in Python to readlines from text file 'TESTFILE.TXT'and display the lines which do not contain 'ke'.	

Example: If the file content is as follows:
    An apple a day keeps the doctor
    away. We all pray for everyone's
    safety.
    A marked difference will come in our country.

The SHOWLINES() function should display the output as:
    We all pray for everyone's safety.

OR

(3)

Write a function in python to count the number of lines in a text file 'Country.txt' which are starting with an alphabet 'W' or 'H'.
For example,If thef ile contents are as follows:
Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow.
The output of the function should be:
 W or w:1 H or
h : 2

---

28. **Consider the following tables GAMES. Give outputs for SQL queries (i)to(iv).**   (2+ 1)

Table:GAMES

GCode	GameName	Number	PrizeMoney	ScheduleDate
101	CaromBoard	2	5000	23-Jan-2004
102	Badminton	2	12000	12-Dec-2003
103	TableTennis	4	8000	14-Feb-2004
105	Chess	2	9000	01-Jan-2004
108	LawnTennis	4	25000	19-Mar-2004

    (i) SELECT COUNT(DISTINCT Number) FROM GAMES;
    (ii)   SELECT MAX(ScheduleDate),MIN(ScheduleDate) FROM GAMES;
    (iii)   SELECT SUM(PrizeMoney) FROM GAMES;
    (iv)   SELECT * FROM GAMES WHERE PrizeMoney>12000;

(b)Write the command to view all the databases in an RDBMS.

29.	Write a function in PythonConvert() to replaces elements having even values with its half and elements having odd values with twice its value in a list.	(3)

eg: if the list contains 3,4,5,16,9 then rearrange the list as 6,2,10,8,18

30.	Write a function in Python PUSH_IN(L), where L is a list of numbers. From this list, push all numbers which are multiple of 3 into a stack which is implemented by using another list.	(3)

OR

Write a function in Python, Push(KItem),where KItem is a dictionary containing the details of Kitchen items– {Item:price}.

The function should push the names of those items in a stack which have price less than 100. Also display the average price of elements pushed into the stack.

For example: If the dictionary contains the following data:
{"Spoons":116,"Knife":50,"Plates":180,"Glass":60}

The stack should contain
Glass
Knife
The output should be:
    The average price of an item is 55.0

SECTION D

31.	Tushar is a Python programmer. He has written a code and created a binary file record.dat with employeeid, ename and salary. The file contains 10 records. He now has to delete a record based on the employee id entered by the user. For this purpose, he creates a temporary file, named temp.dat, to store all the records other than the record to be deleted. If the employee id is not found, an appropriate message should to be displayed. As a Python expert, help him to complete the following code (by completing statements 1, 2, 3, and 4) based on the requirement given above:	4

(i)   Complete Statement #1 to import the required module.
(ii)   Write the correct statement required to open a temporary file named temp.dat. (#Statement 2)
(iii)   Which statement should Aman fill in Statement 3 to read the data from the binary file, record.dat
(iv)   What should be written in Statement4 to write there records in the file temp.dat?

```
import_____                    #Statement1
def update_data():
    rec={} fin=open("record.dat","rb")
    fout=open("_____","")            #Statement2
    found=False
    eid=int(input("Enter employee id:")) while True:
        try:
            rec= _____#Statement3
            if rec["Employee id"]==eid:
                found=Tru
            e else:
                _____    #Statement 4
        except:
            break
    if found==True:
        print("Recorddeleted.")
    else:
        print("Employee with such id is notfound")
        fin.close()
        fout.close()
```

32.	A departmental store MyStore is considering to maintain their inventory using SQL to store the data. As a database Administrator, Abhay has decided that: **Name of the database–mystore** **Name of the table –STORE** **The attributes of STORE are as follows** **ItemNo –numeric** **ItemName–character of size 20** **Scode – numeric** **Quantity– numeric** **Table : STORE**	4

ItemNo	ItemName	Scode	Quantity
2005	SharpnerClassic	23	60
2003	BallPen0.25	22	50
2002	GelPenPremium	21`	150
2006	GelPenClassic	21	250
2001	EraserSmall	22	110
2004	EraserBig	22	220
2009	BallPen0.5	21	180

(a) Identify the attributes suitable to be declared as primary key
(b) Write the query to add the row with following details
    (2010,"Notebook",23,155)
(c)

i)   Abhay wants to remove the table STORE from the database MyStore, Help Abhay in writingthe command for removing the table STORE from the database MyStore.

ii)   Now Abhay wants to display the structure of the table STOREi.e.name of the attributes and their respective data types that he has used in the table. Write the query to display the same.

OR

(i) Abhay wants to ADD a new column price with data type as decimal. Write the query to add the column..

(ii) Now Abhay wants to remove a column price from the table STORE.Write the query.

	SECTION E	
33.	A company ABC Enterprises has four blocks of buildings as shown:	

```
┌─────────┐           ┌─────────┐
│  B1     │           │  B2     │
└─────────┘           └─────────┘

┌─────────┐           ┌─────────┐
│  B3     │           │  B4.    │
└─────────┘           └─────────┘
```

Distance between various blocks/locations:

B3---- B1:-   50M
B1---- B2:-   60M
B2---- B4:-   25M

B4---- B3:-   170M
B3---- B2:-   125M
B3---- B4:-   90M

Number of computers:

  BLOCK B1 --- 150
  BLOCK B2 --- 15
  BLOCK B3 --- 15
  BLOCK B4 --- 25

(i)   Suggest the most appropriate topology for the connection between the blocks.   (1)

(ii) The company wants internet accessibility in all the blocks. The suitable and cost effective technology for that would be?   (1)

(iii) Which devices will you suggest for connecting all the computers with in each of the blocks.   (1)

(iv) The company is planning to link its head office situated in New Delhi with the offices in hilly areas. Suggest a way to connect it economically.   (1)

(v)   Suggest the most appropriate location of the server, to get the best connectivity for maximum number of computers.   (1)

34	(a) Define the term Primary Key with respect to RDBMS. Give one example to support your answer	(1)

	(b) The code given below reads records from the table named student and displays only those records who have marks greater than 75.The structure of a record of table Student is:
	
	RollNo–integer;Name –string;Clas –integer;Marks– integer
	
	Note the following to establish connectivity between Python and MYSQL:
	(i) Username is root
	(ii) Password is abc
	(iii) The table exists in a MYSQL database named **school**.
	(iv) The details(RollNo,Name,Class and Marks) are to be accepted from the user.
	Write the following missing statements to complete the code:
	Statement 1 – to create the cursor object
	Statement 2 – to execute the query that extracts records of those students whose marks are greater than 75.
	Statement3-to read the complete result of the query(records whose marks are greater than 75) into the object named data, from the table student in the database.
	
	``python
	import mysql.connector as mysql
	def sql_data():
	    con1=mysql.connect(host="localhost",user="root",
	                       password="abc",database="school")
	    mycursor= _____ #Statement 1
	    print("Students with marks greater than75are:")
	    _____ #Statement 2
	    data= _____ #Statement3
	    for i in data:
	          print(i)
	``
		(4)

35.	(i) Write one similarity and one difference between a+ and w+
	(ii) A binary file "emp.dat" has structure (EID, Ename, designation,salary)
	Write a function Show() in Python that would read the details of employees from the file "emp.dat" and display the details of those employees whose designation is "Manager"
	
	               (OR)
	(i) What is the difference between readline() and readlines() ?
	(ii) A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price].
	          Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books written by the given Author
		(2+3)

****END****