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2nd Pre-Board Examination (2022-23)

Class – XII **Subject – Computer Science(083)**

Time : 03 Hours **Max. Marks: 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 01 mark 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 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q34 against part (iii) only.
8. All programming questions are to be answered using Python Language only.

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SECTION A		
Q No.	**Question**	**Marks**
1	State True or False "Python is a case insensitive language."	1
2	Which of the following is not a supported operation in Python? (a) **"xyz"+"abc"** (b) **(2)+(3,)** (c) **2+3** (d) **[2,4]+[1,2]**	1

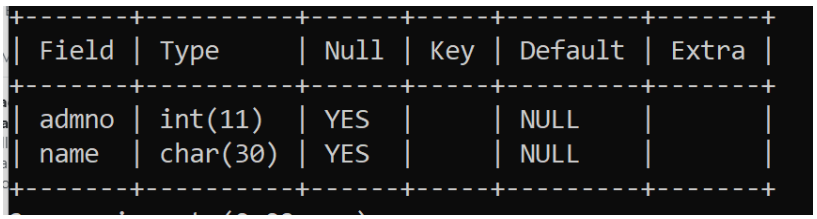
3	Identify the output of following code
	`d={'a':'Delhi','b':'Mumbai','c':'Kolkata'}`
	`for i in d:`
	`  if i in d[i]:`
	`  x=len(d[i])`
	`  print(x)`
	(a) 6 (b) 0 (c) 5 (d) 7
		1

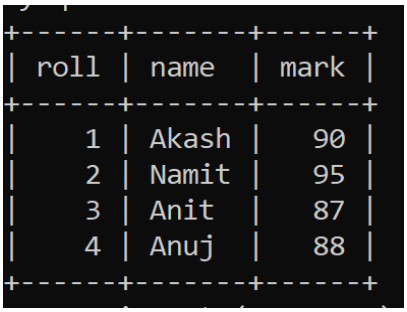
4	Suppose a tuple K is declared as K = (100, 102, 143, 309), which of the following is incorrect? a) print(K[-1]) b) K[3] =405 c) print(min(K)) d) print(max(K))	1
5	Given a List **L=[7,18,9,6,1]**, what will be the output of **L[-2::-1]?** (a) [6, 9, 18, 7] (b) [6,1] (c) [6,9,18] (d) [6]	1
6	A text file "student.txt" is stored on a computer. Identify the correct option out of the following options to open the file for reading	1

	i. myfile = open('student.txt','r+') ii. myfile = open('student.txt','r') iii. myfile = open('student.txt','rb') iv. myfile = open('student.txt') (a) (i), (ii) and (iv) (b) (ii) and (iv) (c) (ii),(iii) and (iv) (d) (i), (ii) and (iii)	
7	Which of the following is a DDL command(s)? a) UPDATE b) ALTER TABLE c) CREATE TABLE d) DROP TABLE	1
8	Which keyword is used to eliminate duplicate values in an SQL select query? a) all b) distinct c) key d) unique	1
9	Predict the output: tup1 = (2,4,[6,2],3) tup1[2][1]=7 print(tup1) (a) Error (b) (2,4,[6,2],3) (c)(2,4,[6,7],3) (d) (2,4,6,7,3)	1
10	A table has 5 rows and 3 columns. A new row is added to it. What will be its cardinality and degree? (a)5, 4 (b) 6, 3 (c)6, 4 (d)5, 3	1
11	Suppose the content of Python.txt file is ***I am studying Python programming.*** What will be the output of the following Python code? f=open('Python.txt') f.seek(12) print(f.read(8)) (a) ng Python (b)g Python p (c) ng Pytho (d) g Python	1
12	A column in a table which is not selected to be a Primary Key is known as _____ (a) Foreign Key (b) Candidate Key (c) Alternate Key (d) Primary Key	1
13	_____protocol is used when we browse different web pages of a website. (a) SMTP (b) VoIP (c) HTTP (d) POP3	1
14	The below given expression will evaluate to **22//5+2**2**3%5** (a) 15 (b) 10 (c) 5 (d) 20	1
15	Write any two properties of stack.	1
16	What is the default return value for a function which don't return any value?	1

	Q17 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 A (c) A is True but R is False (d) A is false but R is True	1
17	**Assertion (A):-** A function header has been declared as **MYFUNCTION(A, B=30)** The function call **MYFUNCTION(20, 60,80)** will give an error. **Reasoning (R):-** During a function call, the number of arguments should match with number of parameters in function definition.	1
18	**Assertion (A):-** The writerow function of csv module takes a list having length equal to the number of columns in CSV file. **Reasoning (R):-** The data inside a CSV file is stored in the form of a string.	1
	SECTION B	
19	Predict the output of the following code? def my_func(a=10,b=30): a+=20 b-=10 return a+b,a-b print(my_func(a=60),my_func(b=40))	2
20	Write any two features of the packet switched network. Or Give two example each of (i) Guided Media (ii) Unguided Media	2
21	If **S="Pythonlanguage"** (a) Predict the output of **print(S[:-6:-2])** (b) Predict the output of d={2:'b',4:'c'} d1={1:'a'} d.update(d1) d[1]='v' print(list(d.values()))	1 1
22	Explain two points of difference between Delete and Drop table commands in SQL.	2
23	(a) Expand the following: (i) PPP (ii) HTTPS (b) What is the use of SMTP protocol?	2
24	Predict the output of below given Python code: def MYFUNCTION(): a=10	2

	global vr vr=0 vr+=a print(vr,end=' ') MYFUNCTION() vr=12 print(vr) Or Predict the output of below given Python code: tuple1 = (5, 12, 7, 4, 9 ,6) list1 =list(tuple1) list1.insert(2,8) list1.pop() tuple1=tuple(list1) print(tuple1)	

25	There is a column mark in the table student. The following two statements are giving different outputs. What may be the possible reason?
	select count(*) from student;
	select count(marks) from student;
	or
	Sunita created the following table named myschool. Consider the below given scenarios and write appropriate SQL queries for the same.
	 
	(i) She forgot to make admno attribute as the Primary key. Write the SQL Query to make admno as the Primary key after the table has been created.
	(ii) She now wants to change the datatype of column name from char(30) to varchar(30). Write SQL query to do so.
		2

	SECTION C	
26	Consider the School and Location table Table: School 	1+2

roll	name	mark
1	Akash	90
2	Namit	95
3	Anit	87
4	Anuj	88

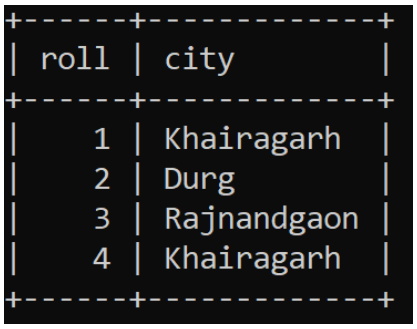
	Table: Location  (a) What will be the output of select * from School natural join Location; (b) Write the output of the queries (i) to (iv) based on the table, School and Location: i. select distinct(city) from location; ii. select s.name,l.city from school s,location l where s.roll=l.roll and l.city like "%h"; iii. select l.city,avg(s.mark) from school s,location l where s.roll=l.roll and l.city='khairagarh'; iv. select city, count(*) from location group by city having count(*)=1;	
27	Write a function COUNTTEXT( ), which reads a text file "Book.txt" and count total number of whose length is more than 4 and ending with 'd. The function should also display all those words in the form of a list. For example, if the Book.txt file contains ***Sachin played cricket on the field of wankhede. He enjoyed his cricket very much.*** then the output should be: Total words - 3 ["played", "field", "enjoyed"] **or** Write a function AMLINE( ), which reads a text file "BOOK.TXT" and counts and displays on the screen all the lines beginning with 'A' or 'M'. For example, if the Book.txt file contains ***Management of time is an art.*** ***One who manages is time well is able to do his work effectively.*** ***A person with good time management skills is an effective leader.*** then the output should be: *Management of time is an art.* *A person with good time management skills is an effective leader.* Total Lines beginning with A or M – 2	3
28	(a) Write the outputs of the SQL queries (i) to (iv) based on the relations Teacher and Placement given below:	3

Table : Teacher

T_ID	Name	Age	Department	Date_of_join	Salary	Gender
1	Arunan	34	Computer Sc	2019-01-10	12000	M
2	Saman	31	History	2017-03-24	20000	F
3	Randeep	32	Mathematics	2020-12-12	30000	M
4	Samira	35	History	2018-07-01	40000	F
5	Raman	42	Mathematics	2021-09-05	25000	M
6	Shyam	50	History	2019-06-27	30000	M
7	Shiv	44	Computer Sc	2019-02-25	21000	M
8	Shalakha	33	Mathematics	2018-07-31	20000	F

Table : Placement

P_ID	Department	Place
1	History	Ahmedabad
2	Mathematics	Jaipur
3	Computer Sc	Nagpur

(i) SELECT Department, count(*) FROM Teacher GROUP BY Department having count(*)<3;
(ii) SELECT MAX(Age),MIN(Age) FROM Teacher;
(iii) SELECT Name, Age, T. Department, Place FROM Teacher T, Placement P WHERE T. Department = P. Department AND Place = "Jaipur";
(iv) SELECT Name, Department, Salary from Teacher where salary between (25000 and 40000) order by salary desc;
(b) Write the query to see the structure of the table Teacher.

29 Write a function GENERATE_INDEX(L), where L is the list of elements passed as argument to the function. The function returns another list named 'NewIndex' that stores the indices of all even Elements of L. For example: If L contains [22,7,9,24,6,5] The NewIndex will have - [0, 3, 4] — 3

30 Write a Python function PUSHSTACK(L), which should create a stack as a list 'SO' from list L containing integers. The stack SO should contain all the odd elements of the list L. — 3

Also, write a function POPSTACK( ) which should pop and print all the elements of the stack SO, and print stack empty at the end.

Write a program in Python to input 5 integers in to a list NUM and the program should use the function PUSHSTACK() to create the stack 'SO' and POPSTACK() to pop the elements from the stack.

For example, if the list L is **[2,7,9,15,14]**

Then SO should be **[7,9,15]**

Output of POPSTACK( ) function should be **14 2 Stack Empty**

or

Write a program in Python to create a dictionary **book_details** having the structure {book name : book price} where book name is a key and book price is value. Write a function in Python, PushBook(book_details) where book_details is a dictionary containing the details of books passed as an argument.The function should push the names of those books in the stack named B**ook_stack** which have price greater than

	500. Also display the count of books pushed into the stack. Write a function POPBooK() which should pop and print all the elements of the stack Book_stack, and print stack empty at the end. *For example:* If the dictionary contains the following data: books={"Python":560,"Java":450,"MySQL":330,"Web Development":725} The stack should contain [“Python”, “Web Development”]. The output should be: The count of books in the stack is 2. Output of POP_BOOK( ) function should be: “Python” “Web Development” **Stack Empty**	
	SECTION D	
31	Ionex Private Ltd. Patna has different divisions Marketing (A1), Sales (A2), Finance (A3) and Production (A4). The company has another branch in New Delhi. The management wants to connect all the divisions as well as all the computers of each division (A1, A2, A3, A4) of Patna branch. Distance between the divisions are as follows : A3 to A1: 20 m A1 to A2: 35 m A2 to A4: 20 m A4 to A3: 130 m A3 to A2: 1000 m A1 to A4: 190 m The number of computers in each division is as follows : A1: 50 A2: 40 A3: 110 A4: 60 Based on the above information, answer the following questions : (i) Suggest the type of network (PAN, LAN, MAN, WAN) required to connect the Finance (A3) division with the New Delhi branch by giving suitable reasons. (ii) Suggest the placement of following devices (a) Switch (b) Repeater (iii) Suggest the division which should be made server by quoting suitable reasons. (iv) The company wants to conduct an online video conference between employees of the Patna and New Delhi branches. Name the protocol which will be used to send voice signals in this conference. (v) Suggest the topology and draw the most suitable cable layout for connecting all the divisions of the Patna branch.	5
32	(a) 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	2+3

AR=[20,30,40,50,60,70];

Lower =random.randint(1,3)

Upper =random.randint(2,4)

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#

(b) Consider the below given SCHOOL table and predict the output of Python program based on this table:

roll	name	mark
1	Akash	90
2	Namit	95
3	Anit	87
4	Anuj	88

```
import mysql.connector as con
mydb=con.connect(host="localhost",user="root",password="1234",\
                 database="db1")
mycursor=mydb.cursor()
mycursor.execute("select * from school where name like 'A%'")
record=mycursor.fetchone()
for i in range(2):
    record=mycursor.fetchone()
    print(record[0],record[1])
print(mycursor.rowcount)
```

or

(a) Predict the output of below given Python code:

```
s="Abc2@xYz"
m=""
for i in range(len(s)):
  if s[i].isupper():
     m+=s[i].lower()
  elif s[i].islower():
     m+=s[i].upper()
  elif s[i].isdigit():
     m+=s[i-1]
  else:
     m = m +'#'
print(m)
```

(b) The code given below reads the following record from the table named student and displays only those records who have marks greater than 75:

RollNo – integer

	Name – string
	Clas – integer
	Marks – integer
	Note the following to establish connectivity between Python and MYSQL:
	• Username is root
	• Password is tiger
	• The table exists in a MYSQL database named school.
	Write the following missing statements to complete the code:
	Statement 1 – to form the cursor object
	Statement 2 – to execute the query that extracts records of those students whose marks are greater than 75.
	Statement 3- 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.
	import mysql.connector as mysql
	def sql_data():
	con1=mysql.connect(host="localhost",user="root",password="tiger",
	database="school")
	mycursor=_____ **#Statement 1**
	print("Students with marks greater than 75 are : ")
	_____ **#Statement 2**
	data=_____ **#Statement 3**
	for i in data:
	print(i)
	print()	

33	Write one application of a csv file. A csv file Employee.csv has three columns [EmpID, Name, Salary]. (i) Write a user defined function **writecsv(L)** which accepts a list L from the user containing EmpID, Name, Salary and write it to the csv file Employee.csv. (ii) Write a function **readcsv(name)** which accepts the employee name as parameter and prints the salary of that employee. or Write one advantage of binary file over csv file. A csv file Shop.csv has three columns [ItemID, Item, Amount]. (i) Write a user defined function **countcsv()** which counts the number of items in the csv file whose amount exceeds Rs 1000. (ii) Write a function **searchcsv(Item)** which accepts the Item name as parameter and prints the amount of that Item.	5 (1+2+2)
	SECTION E	
34	Consider the below given ITEM table	4(1+1+2)

Table : **ITEM**

SNo	Itemname	Type	Price	Stockdate
1	Chaises	Living	11500	2020-02-19
2	Accent Chairs	Living	31000	2021-02-15
3	Baker Racks	Kitchen	25000	2019-01-01
4	Sofa	Living	7000	2020-10-18
5	Nightstand	Bedroom	NULL	2021-07-23

Write SQL queries for the following:

I. Display details of Kitchen and Living items in descending order of Price

II. Display the maximum price for each Type.

III. (a) Insert the following record in the table:
6, "Bed", "Bedroom", 15000, "2021-10-25"
(b) Display the Itemname whose name ends with 's'.

OR (Option for part iii only)

III (a) Delete the Item having price less than 10000.
(b) Update the price of item having NULL price to 1000.

35 Ahana is writing a program to create a binary file Employee.dat which will contain Empcode and Salary for some employees. She has written the following code. As a programmer, help her to successfully execute the given task (4)

(i) Name the module she should import in Line1.
(ii) In which mode, she should open the file in Line2 to add data into the file.
(iii) Fill in the blank in Line3 to read data from the binary file.
(iv) Write the output she will obtain while executing Line4.

```
import _______ as p    #Line1
def AddBinary(Empcode,Salary):
    f=open("Employee.dat",___) #Line2
    p.dump([Empcode,Salary],f)
    f.close()

def ReadBinary():
    f=open("Employee.dat","rb")
    try:
        while True:
            record=_______#Line3
            if record[0][-1]=='a':
                print(record[0],record[1])
    except:
        f.close()

AddBinary('Anaya',30000)
AddBinary('Aman',40000)
AddBinary('Neha',70000)
ReadBinary()#Line4
```

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