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SAMPLE PAPER - 3 (2023-24)

XII - COMPUTER SC. (083)

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 Q35 against part c only.

SECTION-A		
Q. No.	**Question**	Marks
1.	State True or False "break keyword skips remaining part of an iteration in a loop and compiler goes to starting of the loop and executes again"	1
2.	Find the valid keyword from the following? a) Student-Name b) False c) 3rdName d) P_no	1
3.	What will be the output for the following Python statement? X={'Sunil':190, 'Raju':10, 'Karambir':72, 'Jeevan':115} print('Jeevan' in X, 190 in X, sep="#") (a)True#False (b) True#True (c) False#True (d) False#False	1
4.	Consider the given expression: **True and False or not True** Which of the following will be correct output if the given expression is evaluated? (a) True (b) False (b) (c) NONE (d) NULL	1
5.	Select the correct output of the code: a = "Python! is amazing!" a = a.split('!') b = a[0] + "." + a[1] + "." + a[2] print (b) (a) Python!. is amazing!. (b) Python. is amazing. (c) Python. ! is amazing.! (d) will show error	1
6.	Which of the following mode in file opening statement overwrite the existing content? (a) a+ (b) r+ (c) w+ (d) None of the above	1
7.	The attribute which have properties to be as referential key is known as. (a) foreign key (b)alternate key (c) candidate key (d) Both (a) and (c)	1
8.	Which command is used to change some values in existing rows? (a) CHANGE (b) MODIFY (b) (c) ALTER (d) UPDATE	1

9.	Which of the following statement(s) would give an error after executing the following code?
	Q="Humanity is the best quality" # Statement1
	print(Q) # Statement2
	Q="Indeed." # Statement3
	Q[0]= '#' # Statement4
	Q=Q+"It is." # Statement5
	(a) Statement 3 (b) Statement 4 (c)Statement 5 (d)Statement 4 and 5
		1

10.	p=150
	def fn(q):
	_____ #missing statement
	p=p+q
	fn(50)
	print(p)
	Which of the following statements should be given in the blank for #missing statement if the output produced is 200
	(a) global p=150 (b) global p
	(c) p=150 (d) global q
		1

11.	Which function is used to split a line of string in list of words? (a)split( ) (b) splt( ) (c) split_line( ) (d) all of these	1
12.	What possible output(s) will be obtained when the following code is executed import random k=random.randint(1,3) fruits=['mango', 'banana', 'grapes', 'water melon', 'papaya'] for j in range(k): print(j, end="*") (a) mango*banana*grapes (b) banana*grapes (c) banana*grapes*watermelon (d) mango*grapes*papaya	1
13.	Fill in the blank: _____is a communication protocol responsible for sending emails. (a) TCP (b) SMTP (c) PPP (d)HTTP	1
14.	What will be the ouput when following expression be evaluated in Python? print(21.5 // 4 + (8 + 3.0)) (a) 16 (b)14.0 (c) 15 (d) 15.5	1
15.	Which of the following functions other than close() writes the buffer data to file (a) push() (b) write() (c) writeBuffer() (d) flush()	1
16.	To get counting of the returned rows, you may use…….. (a) cursor.rowcount (b) cursor.count (c) cursor.countrecords() (d) cursor.manyrecords()	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

17.	Assertion (A):- If the arguments in function call statement are provided in the format parameter=argument, it is called keyword arguments. Reasoning (R):- During a function call, the argument list first contain keyword argument(s) followed by positional argument(s).	1
18.	Assertion (A): CSV (Comma Separated Values) is a file format for data storage with one record on each line and each field is separated by comma. Reason (R): The format is used to share data between cross platform as text editors are	1

	available on all platforms.	
	SECTION-B	

19.	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.
	Num=int(rawinput("Number greater than 10 :"))
	sum=0
	for i in range(10,Num,3)
	sum+=1
	if i%2=0:
	print(i*2)
	else:
	print(i*3)
	print(sum)
		2

20.	Write one advantage and one disadvantage of packet switching **OR** Which language is the most suitable language to create web pages?	2
21.	(a)Given is a Python string : X="Kendriya Vidyalaya sangathan" Write the output of: **print(X[4:9]*2)** (b) Write the output of the python program code given below: hello = {empname: "Ishan", address: "New Delhi", salary: 10000} hello[salary] = 15000 hello[address] = "Delhi" print(hello.keys())	1 1
22.	Explain the use of GROUP BY clause in a Relational Database Management System. Give example to support your answer.	2
23.	(a) Write the full forms of the following: (i)POP3 (ii) VoIP (b) Define RJ-45?	2

24.	Predict the output of the Python code given below:
	`def Alter(P=15,Q=10):`
	`  P=P*Q`
	`  Q=P/Q`
	`  print(P,"#",Q)`
	`  return Q`
	`A=100`
	`B=200`
	`A=Alter(A,B)`
	`print(A,"$",B)`
	`B=Alter(B)`
	`print(A,"$",B)`
	`A=Alter(A)`
	`print(A,"$",B)`
	OR
	Predict the output of the Python code given below:
	a=tuple()
	a=a + tuple('Python')
	print(a)
	print(len(a))
	b=(10,20,30)
	print(len(b))
		2

25.	Differentiate Where and Having clause in SQL with example. **OR** Define aggregate function and give example.	2

SECTION-C

26. (a) Consider the following tables – Employee and Office: 1+2

Table: Emp

Emp_Id	Name	Salary
E01	Lakshya	54000
E02	Ravi	NULL
E03	Neeraj	32000
E04	Brijesh	42000

Table: dept

Emp_Id	Dept	DOJ
E01	Computer	05-SEP-2007
E02	Physics	05-JAN-2008
E03	Sports	30-DEC-2000
E04	English	05-SEP-2012

What will be the output of the following statement?

SELECT Name, Dept FROM Emp E, dept d WHERE E.Emp_Id=d.Emp_Id;

(b) Consider the following tables SCHOOL and ADMIN. Give the output the following SQL queries:

TABLE: SCHOOL

CODE	TEACHER	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/3/2000	24	10
1009	PRIYA RAI	PHYSICS	03/09/1998	26	12
1203	LIS ANAND	ENGLISH	09/04/2000	27	5
1045	YASHRAJ	MATHS	24/8/2000	24	15
1123	GANAN	PHYSICS	16/7/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
1215	UMESH	PHYSICS	11/05/1998	22	16

TABLE: ADMIN

CODE	GENDER	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

i. SELECT Designation, COUNT (*) FROM Admin GROUP BY Designation HAVING COUNT (*) <2;

ii. SELECT TEACHER FROM SCHOOL WHERE EXPERIENCE >12 ORDER BY TEACHER DESC;

27. Write a method **beginA()** in Python to read lines from a text file Notebook.TXT, and display those lines, which are starting with 'A'. 3

For 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 beginA() function should display the output as:

An apple a day keeps the doctor away.

A marked difference will come in our country.

OR

A text file "PYTHON.TXT" contains alphanumeric text. Write a program that reads this

text file and writes to another file "PYTHON1.TXT" entire file except the numbers or digits in the file.

28. (a) Write the outputs of the SQL queries (i) to (iv) based on the relations CLUB and STUDENT given below: 3

Table : CLUB

COACHID	CNAME	AGE	SPORTS	DATEOFAPP	PAY	GENDER
1	KUKREJA	35	KARATE	27/03/1996	1000	M
2	RAVINA	34	KARATE	20/01/1998	1200	F
3	KARAN	34	SQUASH	19/02/1998	2000	M
4	TARUN	33	BASKETBALL	01/01/1998	1500	M
5	ZUBIN	36	SWIMMING	12/01/1998	750	M
6	KATAKI	36	SWIMMING	24/02/1998	800	F
7	ANKITA	39	SQUASH	20/02/1998	2200	F
8	ZAREEN	37	KARATE	22/02/1998	1100	F
9	KUSH	41	SWIMMING	13/01/1998	900	M
10	SHAILYA	37	BASKETBALL	19/02/1998	1700	M

Table : STUDENT

COACHID	SNAME	STIPEND	STREAM	MARKS	GRADE	CLASS
1	KARAN	400.00	MEDICAL	78.5	B	12B
12	VINNET	450.00	COMMERCE	89.2	A	11C
13	VIVEK	300.00	COMMERCE	68.6	C	12C
4	DHRUV	350.00	HUMANITIES	73.1	B	12C
15	MOHIT	500.00	NONMEDICAL	90.6	A	11A
6	ANUJ	400.00	MEDICAL	75.4	B	12B
17	ABHAY	250.00	HUMANITIES	64.4	C	11A
18	PAYAL	450.00	NONMEDICAL	88.5	A	12A
19	DIKSHA	500.00	NONMEDICAL	92.0	A	12A
10	RISHIKA	300.00	COMMERCE	67.5	C	12C

i) SELECT SPORTS, MIN(PAY) FROM Club Group by SPORTS ;
ii) SELECT MAX(DATEOFAPP), MIN(DATEOFAPP) FROM CLUB;
iii) SELECT CNAME, PAY, C.COACHID, SPORTS FROM CLUB C, STUDENT S WHERE C.COACHID =S.COACHID AND PAY>=1500;
iv) SELECT SName, CNAME FROM Student S, CLUB C WHERE Gender ='F' AND C.COACHID=S.COACHID;

(b) Write SQL command to list all databases.

29. Write a function shiftn(L,n), where L is a list of integers and n is an integer. The function should return a list after shifting n number of elements to the left. 3
Example: If the list initially contains [2, 15, 3, 14, 7, 9, 19, 6, 1, 10] and n=2
then function should return [3, 14, 7, 9, 19, 6, 1, 10, 2, 15]
If the list initially contains [2, 15, 3, 14, 7, 9, 19, 6, 1, 10] and n=4
then function should return [7, 9, 19, 6, 1, 10, 2, 15, 3, 14]

30. A nested list contains the data of visitors in a museum. Each of the inner lists contains the following data of a visitor: 3

[V_no (int), Date (string), Name (string), Gender (String M/F), Age (int)]

Write the following user defined functions to perform given operations on the stack named "status":

(i) Push_element(Visitors) - To Push an object containing Gender of visitor who are in the age range of 15 to 20.

(ii) Pop_element() - To Pop the objects from the stack and count and display the number of Male and Female entries in the stack. Also, display "Done" when there are no elements in the stack.

For example: If the list of Visitors contains:

[['305', "10/11/2022", “Geeta”,"F”, 35],
['306', "10/11/2022", “Arham”,"M”, 15],
['307', "11/11/2022", “David”,"M”, 18],
['308', "11/11/2022", “Madhuri”,"F”, 17],
['309', "11/11/2022", “Sikandar”,"M”, 13]]

The stack should contain

F
M
M

The output should be:

Female: 1
Male: 2
Done

OR

Write a function in Python, Push(EventDetails) where , EventDetails is a dictionary containing the number of persons attending the events– {EventName : NumberOfPersons}. The function should push the names of those events in the stack named ‘BigEvents’ which have number of persons greater than 200. Also display the count of elements pushed on to the stack.

For example:

If the dictionary contains the following data:

EventDetails ={"Marriage":300, "Graduation Party":1500, "Birthday Party":80, "Get together" :150}

The stack should contain:

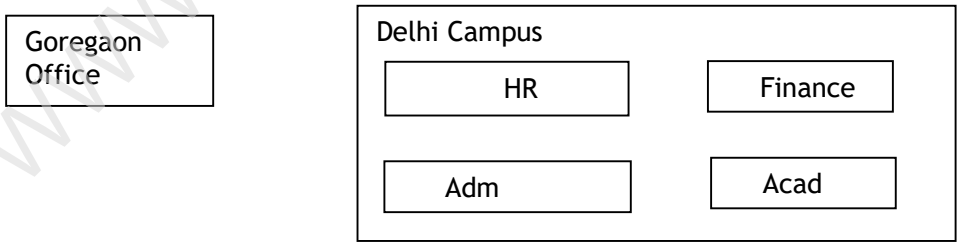
Marriage
Graduation Party

The output should be:

The count of elements in the stack is 2

SECTION-D

31. Ripunjay is planning to connect its Delhi Campus with its head office at Goregaon. Its Delhi Campus is spread across an area of approx. 1 square kilometers consisting of 3 blocks. HR, Acad and Adm. You as a network expert have to suggest answers to the five queries (i) to (v) raised by them. 5*1



Shortest distances between various blocks

HR to Adm	120m
HR to Acad	75m
Acad to Adm	130m
HR to Finance	70m
Finance to Adm	90m
Goregaon to Delhi Campus	50 km

Number of computers installed at various blocks

Block	**Number of Computers**

	HR 250 Adm 30 Acad 70 Finance 20 Goregaon 20 (i) Suggest the most suitable block in the Delhi Campus to host the server. Give a suitable reason with your suggestion. (ii) Suggest the cable layout among the various blocks within the Delhi Campus for connecting the blocks. (iii) Suggest the placement of the following devices with appropriate reasons: a. Switch / Hub b. Repeater (iv) Suggest a protocol that shall be needed to provide Video Conferencing solution between Goregaon Office and Delhi campus. (v) Suggest the type of network to connect Goregaon Office and Delhi campus.	
32.	(a) Write the output of the code given below: a=5 def add(b=2): global a a=a+b print(a,'#',b) return a b=add(a) print(a,'#',b) b=add(b) print(a,'#',b) (b) The code given below inserts the following record in the table Employee: EmpNo – integer Name – string Department – string Salary – integer Note the following to establish connectivity between Python and MYSQL: ▪ Username is root ▪ Password is brick ▪ The table exists in a MYSQL database named organization. ▪ The details (EmpNo, Name, Department and Salary) are to be accepted from the user. Write the following missing statements to complete the code: Statement 1 – to form the cursor object Statement 2 – to execute the command that inserts the record in the table Student. Statement 3- to add the record permanently in the database import mysql.connector as mysqldef sql_data(): con=mysql.connect(host="localhost",user="root",password="brick", database="organization") mycursor=_____ **#Statement 1** eno=int(input("Enter Employee number :: ")) name=input("Enter Name :: ") dept=input("Enter Department name :: ") sal=int(input("Enter Salary :: "))	2+3

```
query="insert into student values({},'{}',{},{})".format(eno,name,dept,sal)
_____                                    #Statement 2
_____                                    # Statement 3
print("Data Added successfully")
```

OR

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

```
a="Give me a glass of water!"
n =len(a)
b=" "
for i in range(0, n):
    if a[i] >= 'a' and a[i] <= 'k':
        b = b + a[i].upper()
    elif (a[i] >= 'l' and a[i] <= 'z'):
        b = b + a[i-1]
    elif  a[i].isupper():
        b = b + a[i].lower()
    else:
        b = b + '#'
print(b)
```

(a) The code given below reads the following record from the table named items and displays only those records who have price greater than 100:

ItemNo –integer
Name – string
Price – integer

Note the following to establish connectivity between Python andMYSQL:

- Username is root
- Password is epic
- The table exists in a MYSQL database named **store.**

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 items with price greater than 100.
Statement 3 - to read the complete result of the query (records whose marks are greater than 75) into the object named data, from thetable studentin the database.

```
import mysql.connector as mysqlcon
def sql_data():
    con=mysqlcon.connect(host="localhost",user="root",password="epic",
    database="store")
    mycursor=_____#Statement1
    print("Items with price greater than 100 are :")
    _____#Statement2
    data=_____#Statement3
    for i in data:
        print(i)
```

33.	a. What is the advantage of using a csv file for permanent storage? **b.** Write a python program to create a csv file dvd.csv and write 10 records in it Dvdid, dvd_name, qty, price. Display those dvd details whose dvd price is more than 25. **OR** a Write difference between a binary file and a csv file.	2+3

b. Write a Program in Python that defines and calls the following user defined functions:

(i) **add() –** To accept and add data of an employee to a CSV file 'empdata.csv'. Each record consists of a list with fieldelements as eid, ename and salaryto store empid, emp name and emp salary respectively.

(ii) search()- To display the records of the emp whose salary is more than 10000.

SECTION-E

34. Mubarak creates a table Items with a set of records to maintain the details of items. After creation of the table, he has entered data of 5 items in the table. 1+1+2

Table: items

ItemNo	Item	Scode	Qty	Rate	LastBuy
2005	Sharpener Classic	23	60	8	31-JUN-09
2003	Balls	22	50	25	01-FEB-10
2002	Gel Pen Premium	21	150	12	24-FEB-10
2006	Gel Pen Classic	21	250	20	11-MAR-09
2001	Eraser Small	22	220	6	19-JAN-09

Based on the data given above answer the following questions:

(i) Identify the most appropriate column, which can be considered as Primary key.

(ii) If 3 columns are added and 2 rows are deleted from the table , what will be the new degree and cardinality of the above table?

(iii) Write the statements to:

a. Insert the following record into the table as (2024, Point Pen, 20, 11, 350, 15-NOV-2022).

b. Increase the rate of the items by 2% whose name ends with 'c'.

OR (Option for part iii only)

(iii) Write the statements to:

a. Delete the record of items having rate greater than equal to 10.

b. Add a column REMARKS in the table with datatype as varchar with 50 characters

35. Anamika is a Python programmer. She has written a code and created a binary file **data.dat** with sid, sname and marks. The file contains 10 records.
She now has to update a record based on the sid entered by the user and update the marks. The updated record is then to be written in the file **extra.dat**. The records which are not to be updated also have to be written to the file extra.dat. If the sid is not found, an appropriate message should to be displayed.
As a Python expert, help him to complete the following code based on requirement given above:

```
import ……..                                          #Statement 1
def update_data():
    rec={}
    fin=open("data.dat","rb")
    fout=open("_____")                                #Statement 2
    found=False
    eid=int(input("Enter student id to update their marks :: "))
    while True:
        try:
            rec=_____                                 #Statement 3
            if rec["student id"]==sid:
                    found=True
                    rec["marks"]=int(input("Enter new marks:: "))
            pickle._____                              #Statement 4
```

```
            except:
                break
        if found==True:
            print("The marks of student id ",sid," has been updated.")
        else:
            print("No student with such id is not found")
        fin.close()
        fout.close()
```

(i) Which module should be imported in the program? (Statement1)

(ii) Write the correct statement required to open a temporary file named extra.dat. (Statement 2)

(iii) Which statement should Anamika fill in Statement 3 to read the data from the binary file, data.dat and in Statement 4 towrite the updated data in the file, **extra.dat**?