



Instructions:

(i) All questions are compulsory.

(ii) Python, SQL

1. Consider the following relations MobileMaster & MobileStock:-

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MobileMaster

M_Id	M_Company	M_Name	M_Price	M_Mf_Date
MB001	Samsung	Galaxy	4500	2013-02-12
MB003	Nokia	N1100	2250	2011-04-15
MB004	Micromax	Unite3	4500	2016-10-17
MB005	Sony	XperiaM	7500	2017-11-20
MB006	Oppo	SelfieEx	8500	2010-08-21

MobileStock

S_Id	M_Id	M_Qty	M_Supplier
S001	MB004	450	New Vision
S002	MB003	250	Praveen Gallery
S003	MB001	300	Classic Mobile Store
S004	MB006	150	A-one Mobiles
S005	MB003	150	The Mobile
S006	MB006	50	Mobile Centre

Write the SQL query for questions from (i) to (iv) & write the output of SQL command

for questions from (v) to (viii) given below:-

(i) Display the Mobile company, Mobile name & price in descending order of their manufacturing date.

(ii) List the details of mobile whose name starts with "S".

(iii) Display the Mobile supplier & quantity of all mobiles except "MB003".

(iv) To display the name of mobile company having price between 3000 & 5000.

(v) SELECT M_Id, SUM(M_Qty) FROM MobileStock GROUP BY M_Id;

(vi) SELECT MAX(M_Mf_Date), MIN(M_Mf_Date) FROM MobileMaster;

(vii) SELECT M1.M_Id, M1.M_Name, M2.M_Qty, M2.M_Supplier FROM MobileMaster M1, MobileStock M2 WHERE M1.M_Id=M2.M_Id AND M2.M_Qty>=300;

(viii) SELECT AVG(M_Price) FROM MobileMaster;

2. Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii) which are based on the tables.

6

TABLE : BOOK

Code	BNAME	TYPE
F101	The priest	Fiction
L102	German easy	Literature
C101	Tarzan in the lost world	Comic
F102	Untold Story	Fiction
C102	War Heroes	Comic

TABLE: MEMBER

MNO	MNAME	CODE	ISSUEDATE
M101	RAGHAV SINHA	L102	2016-10-13
M103	SARTHAK JOHN	F102	2017-02-23
M102	ANISHA KHAN	C101	2016-06-12

(i) To display all details from table MEMBER in descending order of ISSUEDATE.

(ii) To display the BNO and BNAME of all Fiction Type books from the table BOOK

(iii) To display the TYPE and number of books in each TYPE from the table BOOK

(iv) To display all MNAME and ISSUEDATE of those members from table MEMBER who have books issued (i.e ISSUEDATE) in the year 2017.

(v) SELECT MAX(ISSUEDATE) FROM MEMBER;

(vi) SELECT DISTINCT TYPE FROM BOOK;

(vii) SELECT A.CODE,BNAME,MNO,MNAME FROM BOOK A, MEMBER B WHERE A.CODE=B.CODE ;

(viii) SELECT BNAME FROM BOOK WHERE TYPE NOT IN ("FICTION", "COMIC");

3. Observe the following table carefully and write the names of the most appropriate columns, which can be considered as (i) candidate keys and (ii) primary key. 2

Code	Item	Qty	Price	TransactionDate
1001	Plastic Folder 14"	100	3400	2014-12-14
1004	Pen Stand Standard	200	4500	2015-01-31
1005	Stapler Mini	250	1200	2015-02-28
1009	Punching Machine Small	200	1400	2015-03-12
1003	Stapler Big	100	1500	2015-02-02

4. Observe the following table and answer the parts(i) and(ii) accordingly 2

Table:Product

Pno	Name	Qty	PurchaseDate
101	Pen	102	12-12-2011
102	Pencil	201	21-02-2013
103	Eraser	90	09-08-2010
109	Sharpener	90	31-08-2012
113	Clips	900	12-12-2011

(i) Write the names of most appropriate columns, which can be considered as candidate keys.

(ii) What is the degree and cardinality of the above table?

5. Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables. 6

TRAINER

TID	TNAME	CITY	HIREDATE	SALARY
101	SUNAINA	MUMBAI	1998-10-15	90000
102	ANAMIKA	DELHI	1994-12-24	80000
103	DEEPTI	CHANDIGARG	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

COURSE

CID	CNAME	FEES	STARTDATE	TID
C201	AGDCA	12000	2018-07-02	101
C202	ADCA	15000	2018-07-15	103
C203	DCA	10000	2018-10-01	102
C204	DDTP	9000	2018-09-15	104
C205	DHN	20000	2018-08-01	101
C206	O LEVEL	18000	2018-07-25	105

1. Display the Trainer Name, City & Salary in descending order of their Hiredate.
2. To display the TNAME and CITY of Trainer who joined the Institute in the month of December 2001.

3. To display TNAME, HIREDATE, CNAME, STARTDATE from tables TRAINER and COURSE of all those courses whose FEES is less than or equal to 10000.

4. To display number of Trainers from each city.

5. SELECT TID, TNAME, FROM TRAINER WHERE CITY NOT IN('DELHI', 'MUMBAI');

6. SELECT DISTINCT TID FROM COURSE;

7. SELECT TID, COUNT(*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1;

8. SELECT COUNT(*), SUM(FEES) FROM COURSE WHERE STARTDATE<'2018-09-15';

6. Explain function argument types with examples of each. 3

7. Explain LEGB rule. 2

8. What would be the flow of execution for following code? 2

```

1 def fun(start, stop, step) :
2     x=start
3     while x < stop:
4         print(x)
5         x+=step
6
7 print(fun(0, 5, 2))

```

9. What would be the flow of execution for following code & predict the output. 2

```

1 def power(b, p) :
2     r=b**p
3     return r

```

```

4
5     def calcsquare(a):
6         a=power(a,2)
7         return a
8
9     n=5
10    result=calcsquare(n)
11    print(result)

```

10. Consider a function with following header:

```
def info(obj, spacing=10, collapse = 1):
```

Here are some function calls given below. Find out which of these are correct and which of these are incorrect stating reasons. 4

- a. info(obj1)
- b. info(spacing=20)
- c. info(obj2, 12)
- d. info(obj11, obj=obj12)
- e. info(obj3, collapse=0)
- f. info()
- g. info(collapse=0, obj3)
- h. info(spacing=15, obj=obj4)

11. Predict the output of the following code fragment? 2

```

def check(n1=1, n2=2):
    n1=n1+n2
    n2+=1
    print(n1, n2)
check( )
check(2, 1)
check(3)

```

12. From the program code given below, identify the parts mentioned below: 2

```

def pn(x):
    x=72
    return x+3
y=54
r=pn(y)

```

Identify these parts: Function header, function call, arguments, parameters, function body, main program.

13. What will the output of the following code? 1

```

n=1
def fun():
    n=10
    return n
print(n)
print(fun())
print(n)

```

14. What will the output of the following code? 2

```

a=10
y=15
def f():
    global a
    y=a
    a=2
    print("y=", y, "a=", a)
    print("a+y=", a+y)
    return a+y
print("y=", y, "a=", a)
print(f())
print("y=", y, "a=", a)

```

15. What will the output of the following code? 2

```

def increment(n):
    n.append([49])
    return n[0], n[1], n[2], n[3]
l=[23, 35, 47]
m1, m2, m3, m4=increment(l)
print(l)
print(m1, m2, m3, m4)
print(l[3]==m4)

```

16. Explain about file access modes. 3
17. Explain about functions of reading from files with examples for each. 3
18. Write a program to add two more employees details to the file "emp.txt" already stored in disk. 2
19. Explain about functions of writing to files with examples for each. 2
20. Explain about flush() function. 1
21. What is the significance of file object? Give an example. 2
22. How are the following codes different from one another? 2
- (a) fo=open("file.txt",'r')
fo.read()
- (b) fo=open("file.txt",'r')
fo.read(100)
23. Write code to print just the last line of a text file "DATA.txt". 2
24. What will the output of the following code? 2
- ```
i=5
j=7
x=0
i=i+(j-i)
x=j+i
print(x,":",i)
j=j**2
x=j+i
i=i+1
print(i,":",j)
```
25. Rewrite the following Python program after removing all the syntactical errors (if any), underlining each correction.: 2
- ```
def checkval:
    x = input("Enter a number")
    if x % 2 = 0 :
        print (x,"is even")
    else if x<0 :
        print (x,"should be positive")
    else ;
        print (x,"is odd")
```
26. Find the output of the following Python program: 3
- ```
def makenew(mystr):
 newstr = " "
 count = 0
 for i in mystr:
 if count%2!=0:
 newstr = newstr+str(count)
 else:
 if i.islower():
 newstr = newstr+i.upper()
 else:
 newstr = newstr+i
 count +=1
 newstr = newstr+mystr[:1]
 print("The new string is :",newstr)
makenew("sTUdeNT")
```
27. Find the output. 2
- ```
def calcresult():
    i = 9
    while i>1:
        if(i%2==0):
            x=i%2
            i=i-1
        else:
            i=i-2
            x=i
        print(x**2)
    calcresult()
```