

## SUMMER HOME WORK 2021-22

### XII COMPUTER SCIENCE

1. Write the MySQL commands to open the database named **TEST**.
2. Write SQL command to show the names of tables starting with "**ST**" in database named as **EMPLOYEE..**
3. Write SQL command which will not use BETWEEN clause and produce the same result as produced by the given following command:  
**SELECT \* FROM BOOKS WHERE PRICE BETWEEN 350 AND 550;**
4. Write an alternate SQL command to produce the same result as that of the given command :  
**SELECT \* FROM BOOKS WHERE PUBLISHER= 'BPB' OR PUBLISHER='OXFORD' OR PUBLISHER= 'JPH';**
5. There is a column **FEE** in the table **STUDENT**. The following two statements:  
**SELECT COUNT (\*) FROM STUDENT;**  
**SELECT COUNT (FEE) FROM STUDENT;**  
 are giving different output as 12 and 9 respectively. What may be the possible reason?
6. Write SQL statement to extract the word "net" from the string "Internet Superhighway".
7. Write SQL command to display the position of "My" in the string "Enjoying MySQL".
8. Write the output for the command: `SLEECT ROUND(754.89,-2);`
9. Write a SQL command to create the following table 'MCA' with MNO as Primary key and Fee and Semester with NOT NULL constraints.

**TABLE: MCA**

<b>MNO</b>	<b>Name</b>	<b>Address</b>	<b>Join_ DT</b>	<b>Fee</b>	<b>Semester</b>	<b>Grade</b>
1001	ADITYA	B-4, DWARKA	2007-07-23	4500	I	A1
1234	KOMAL	SEC 5, R.K PURAM	2009-06-15	500	III	B2
5678	ANUSHIKA	B3/2, V.VIHAR	2008-06-22	7000	I	C1
9854	HIMANSHU	SEC 2, PUNA	2009-03-13	8000	II	B2
3265	MUMTA	123/A, MUMBAI	2013-02-17	4500	I	A2
4512	PRERNA	53/2, CHANDIGARH	2008-05-10	6500	III	C3
7645	AMIT	11/7, CHENNAI	2010-05-	10000	II	B1

			25			
9054	SUMIT	117-N, DELHI	2008-3-27	10500	III	A2
8326	REKHA	56/E, AHEMADABAD	2012-04- 12	7600	I	C2
7324	SAVITRI	73/C, FARIDABAD	2013-06- 15	8700	I	C1

Write SQL query for the following based on table 'MCA'

- (i) To display Name, MNO of those students who joined after year 2010.
- (ii) To display all the information in Descending order of MNO.
- (iii) To add record with the following data:  
8326, "AMIT", "OG2-8, MALVIYA NAGAR", "2010-07-12", 6700, "II", "A1"
- (iv) To count unique SEMESTER numbers in given table.
- (v) To add new column REMARKS of data type VARCHAR of size 20.
- (vi) To change the FEE of AMIT from 10000 to 7000.

10. Write SQL commands for the questions from (i) to (viii) on the basis of table **HOSPITAL**

**TABLE: HOSPITAL**

No.	Name	Age	Department	Dateofadm	Charges	Sex
1	Arprit	62	Surgery	2008-01-21	1300	M
2	Zarina	22	ENT	2007-12-12	1250	F
3	Kareena	32	Orthopedic	2008-02-19	1200	M
4	Arun	12	Surgery	2008-01-11	1300	M
5	Zubin	30	ENT	2007-01-12	1250	M
6	Ketaki	16	ENT	2008-02-04	1250	F
7	Ankita	29	Cardiology	2008-02-20	1800	F
8	Zareen	45	Gynecology	2007-02-10	1300	F
9	Kush	19	Cardiology	2008-01-13	1800	M
10	Shilpa	23	Nuclear Medicine	2008-02-21	1400	F

- (i) To select all the information of patients of cardiology department
- (ii) To list the names of female patients who are in ENT department
- (iii) To list names of all patients with their date of admission in ascending order
- (iv) To display patient's name, charges, age for only male patients.
- (v) To count the number of female patients
- (vi) To reduce the charges of male patients of cardiology department by 5%.
- (vii) To display the departments existing in the Hospital table
- (viii) To display records of those patients who were admitted in the year 2007

11. Write SQL commands for the queries given from (i) to (iv) and (v) to (viii) write the output of the SQL commands based on a table LIBRARY shown below:

**Table: LIBRARY**

No.	Title	Author	Subject	Publisher	Qty	Price
1	Data Structure	Lipschute	DS	McGraw	4	217.00
2	DOS Guide	NORTRON	OS	PHI	3	175.00
3	Turbo C++	Robert Lafore	Prog	Galgotia	5	270.00

4	Dbase Dummies	Palmer	DBMS	PustakM	7	130.00
5	Mastering Windows	Cowart	OS	BPB	1	225.00
6	Computer Studies	French	FND	Galgotia	2	75.00
7	COBOL	Stern	Prog	John W	4	1000.00
8	Guide Network	Freed	NET	Zpress	3	200.00
9	Basic for Beginners	Norton	Prog	BPB	3	40.00
10	Advanced Pascal	Schildt	Prog	McGraw	4	350.00

- (i) To display the title of all books with Price between 100 and 300.
- (ii) To display Title and Author of all the books having type Prog and published by BPB.
- (iii) To display the list of all the books with price more than 130 in ascending order of Qty.
- (iv) To display the list of all books whose quantity is less than 4.
- (v) Select MIN(Price) from Library;
- (vi) Select Sum(Price \* Qty) from Library where Qty > 3;
  
- (vii) Select Avg(Price) from Library where Qty < 4;
- (viii) Select Count(Distinct Publisher) from Library;

## **PYTHON PROGRAMMING**

1. Write the output from the following code:

```

a) x = 10
y = 20
if (x>y):
print x+y
else:
print x-y
b) print "Inspirational stories \n for \t Children"
c) s = 0
for I in range(10,2,-2):
s+=I
print "sum= ",s
d) n = 50
i = 5
s = 0
while i<n:
s+ = i
i+ = 10
print "i=",i
print "sum=",s
e) y = 2000
if (i%4==0):
print "Leap Year"
else:
print "Not leap year"

```

2. Write for statement to print the following series:

a) 10,20,30.....300

b) 105,98,91,....7

3. Write the while loop to print the following series:

a) 5,10,15,...100

b) 100,98,96,...2

4. How many times are the following loop executed?

a) for a in range(100,10,-10):

print a

b) i = 100

while(i<=200):

print i

i +=20

c) for b in (1,10):

print b

d) i = 4

while (i>=4):

print i

i+ = 10

f) i=2

while (i<=25)

print i

5. Rewrite the following for loop into while loop:

a) for a in range(25,500,25):

print a

b) for a in range(90,9,-9):

print a

6. Rewrite the following while loop into for loop:

a) i = 10

while i<250:

print i

i = i+50

b) i=88

while(i>=8):

print i

i- = 8

7. Which command is used to convert text into integer value?

8. Find the errors from the following code.

a. T=[a,b,c]

Print T

b. for i in 1 to 100 :

print I

c. i=10 ;

while [i<=n] :

print i

i+=10

d. if (a>b)

```

print a:
else if (a<b)
print b:
else
print "both are equal"

```

9. Find the output from the following code:

```

L=[100,200,300,400,500]
L1=L[2:4]
print L1
L2=L[1:5]
print L2
L2. .extend(L1)
print L2

```

10. Write program to input any number and to print all factors of that number.

11. Write a program to input any number and to check whether given number is Armstrong or not. (Armstrong 1,153,etc.  $1^3 = 1$  ,  $1^3 + 5^3 + 3^3 = 153$ )

12. Write a program to input employee no, name basic pay and to find HRA, DA and netpay.

**Basic pay Hra Da**

>100000 15% 8%

<=100000&>50000 10% 5%

<=50000 5% 3%

13. Write a program to find all prime numbers up to given number.

## PANDAS-1

Create the following Series and do the specified operations:

a) EngAlph, having 26 elements with the alphabets as values and default index values.

b) Vowels, having 5 elements with index labels 'a', 'e', 'i', 'o' and 'u' and all the five values set to zero. Check if it is an empty series.

c) Friends, from a dictionary having roll numbers of five of your friends as data and their first name as keys.

d) MTseries, an empty Series. Check if it is an empty series.

e) MonthDays, from a numpy array having the number of days in the 12 months of a year. The labels should be the month numbers from 1 to 12.

6. Using the Series created in Question 5, write commands for the following:

a) Set all the values of Vowels to 10 and display the Series.

b) Divide all values of Vowels by 2 and display the Series.

c) Create another series Vowels1 having 5 elements with index labels 'a', 'e', 'i', 'o' and 'u' having values [2,5,6,3,8] respectively.

d) Add Vowels and Vowels1 and assign the result to Vowels3.

e) Subtract, Multiply and Divide Vowels by Vowels1.

f) Alter the labels of Vowels1 to ['A', 'E', 'I', 'O', 'U'].

7. Using the Series created in Question 5, write commands for the following:

- a) Find the dimensions, size and values of the Series EngAlph, Vowels, Friends, MTseries, MonthDays.
- b) Rename the Series MTseries as SeriesEmpty.
- c) Name the index of the Series MonthDays as monthno and that of Series Friends as Fname.
- d) Display the 3rd and 2nd value of the Series Friends, in that order.
- e) Display the alphabets 'e' to 'p' from the Series EngAlph.
- f) Display the first 10 values in the Series EngAlph.
- g) Display the last 10 values in the Series EngAlph.
- h) Display the MTseries.

8. Using the Series created in Question 5, write commands for the following:

- a) Display the names of the months 3 through 7 from the Series MonthDays.
- b) Display the Series MonthDays in reverse order.

Create the following DataFrame Sales containing year wise sales figures for five sales persons in INR. Use the years as column labels, and sales person names as row labels.

```

100.5 12000 20000 50000
150.8 18000 50000 60000
200.9 22000 70000 70000
30000 30000 100000 80000
40000 45000 125000 90000

```

10. Use the DataFrame created in Question 9 above to do the following:

- a) Display the row labels of Sales.
- b) Display the column labels of Sales.
- c) Display the data types of each column of Sales.
- d) Display the dimensions, shape, size and values of Sales.
- e) Display the last two rows of Sales.
- f) Display the first two columns of Sales.
- g) Create a dictionary using the following data. Use this dictionary to create a DataFrame Sales2.

```

160000
110000
500000
340000
900000

```

- h) Check if Sales2 is empty or it contains data.

## **PYTHON PROJECT FOR XII PRACTICAL**