DBMS and Web Programming

1. Create an HTML page for your college. It should contain the following
   a) Heading tags
   b) An image of the college. Use the width and border attributes.
   c) A brief description of the college which should include some text in bold, italics. The contents background color should be set as black and text color should be set as white. Font size should be 14 pt.
   d) List of programmes offered by the college (Use unordered lists)
   e) Display the timings of each period using ordered list as shown below.
      1. 9.30 – 10.30
      2. 10.30 – 11.30
      3. 11.30 – 12.30
      4. 1.30 - 2.30
      5. 2.30 – 3.30
2. Create an HTML page which contains the heading Result. The body should contain your name and register no. Create a hyper link to another page which displays your mark list as shown in the format below. Apply CSS styling to table to make the header rows background color light blue.

Your Name (Your Reg No.)					
Course Title	**Marks Awarded**			**Max Marks**	**Result**
	IA	ESE	Total		
Paper 1	10	38	48	50	P
Paper 2	9	30	39	50	P
Paper 3	10	40	50	50	P
Total Marks			**137**	**150**	**P**

3. Create an HTML form to accept name, gender, email, date of birth, password, address, programme, University, Languages Known. The following requirements are to be satisfied.
   a) Use place holders for name, email and password
   b) Programmes should be displayed using a data list with values Computer Science, Physics, Chemistry, Mathematics and Statistics.
   c) Date of birth should be accepted from a calendar. Use appropriate input type.
   d) University should be a drop-down list with values Kannur University, University of Calicut, MG University and Kerala University
   e) Address should contain multiple lines of text
   f) Languages known should be check boxes for Malayalam, English and Hindi.
   g) Name is mandatory field (cannot be left blank). Email should be validated for proper format before submission.
   h) On clicking submit button, a new HTML page should be displayed with a message "Successfully Registered".
4. A university needs to maintain details of students. Create a table with the schema *student (regno, name, sex, city, programme, cgpa)*. *regno* is the primary key. *cgpa* should be a real number with 3 digits to the right of the decimal point. Apply suitable constraints to ensure that *sex* can take up only values 'm' or 'f' and that *cgpa* is a decimal number between 0 and 10. Insert the following data into the table.

RegNo.	Name	Sex	City	Programme	CGPA
1001	Rahul	m	Kasaragod	Mathematics	8.550
1002	Shravan	m	Wayanad	Computer Science	6.550
1003	Arjun	m	Kannur	Mathematics	3.550
1004	Sandra	f	Kannur	Computer Science	9.010

1005	Santhosh	m	Wayanad	Computer Science	3.450
1006	Rajeev	m	Kannur	Computer Science	8.120
1007	Anjali	f	Kasaragod	Mathematics	8.250
1008	Megha	f	Kannur	Computer Science	4.850

a) Rename the column *city* as *place*.
b) Update the *programme* "Computer Science" with "CS".
c) Select the *regno*, *name*, *programme* and *cgpa* of all boy students whose *name* starts with the letter "S". Name should be displayed in capital letters.
d) Display the *regno*, *name*, *programme* and *cgpa* of the top scorer in "CS".
e) Display all details of girl students who got "A" Grade (*cgpa* between 8 and 8.99) in Mathematics.
f) Delete the records of all students who failed (*cgpa* < 4.00).

5. A bank needs to maintain customer and account details. Create 2 tables with following schema. *Customer (custid, name, sex, city)* and *account (custid, accno, type, amount)*. *custid* is the primary key for the *customer* table and *accno* is the primary key for the *account* table. Apply suitable constraints to ensure that *sex* can take up only values 'm' or 'f'. Insert the following data into the tables.

customer			
custid	name	sex	city
101	Arjun	m	Kannur
102	Megha	f	Kannur
103	Diya	f	Kasaragod
104	John	m	Calicut
105	Anagha	f	Calicut
106	Sayeed	m	Calicut
107	Rahul	m	Calicut

account			
custid	accno	type	amount
101	1001	SB	1000
101	1002	FIXED	10000
102	1003	SB	2000
103	1004	FIXED	2000
104	1005	SB	1000
105	1006	FIXED	30000
106	1007	SB	1000

a) Using join, display all the details of customers having only FIXED account in the bank. The details should include their account details also. Sort the result in descending order of *amount*.
b) Display all the details of customers in the bank along with their account details. The result should include customers even if they do not have SB or FIXED accounts.
c) Maturity amount for a FIXED account is calculated by adding 8% to the amount (i.e. maturity_amount=amount*1.08). Write a SELECT query to display *custid*, *name*, *amount*, *maturity_amount* for all the customers having only FIXED accounts in the bank.
d) Find the total *amount* in the account table.
e) Deduct the *amount* by Rs. 50 for all SB accounts in the bank using UPDATE statement.
f) Write a single SQL query to display the total amount for FIXED and total amount for SB accounts.

6. Create a table with following schema *books(title, author, shelfno)*. Create an HTML file which contains a form to accept book's title, author and shelf no. Write a PHP program to insert *title*, *author* and *shelf no* in the form to the *books* table. Insert 3 books' details using this and verify whether the details are present in the table using SQL.

Python Programming

1. Write a python program to perform the following
   a) Accept n numbers and sort the n numbers using built-in function
   b) Find the mean and standard deviation of those n numbers using statistical functions
   c) Using mathematical functions, find the sines and cosines of the angles 0, 30, 45, 60 and 90 degrees.
2. Write a python program to perform the following using numpy array
   a) Accept 2 matrices and find their product
   b) Find the transpose of the first matrix
3. Write a python program to plot Sin x and Cos x in a single plot for x ranging from 0 to 360 degrees. Plot should have a title. It should also include labels for X axis and Y axis along with legends for both curves.