- Return the question paper.
- Read each question completely before answering it. There are **8 questions**
- *In case of any ambiguity, you may make assumptions.* But your assumption should not contradict with any *statement in the question paper.*
- All the answers must be solved according to the sequence given in the question paper.
- Paper is completely Theory based

Time: 2 hours. **Total Point: 90**

DBMS (20 POINTS)

Question 1 **(12 points)**

You are tasked with designing a database for a university system. The system needs to manage information about students, courses, and professors. Each student is enrolled in multiple courses, and each course is taught by a professor. Professors can teach multiple courses, and each course can have multiple students.

Design a relational database schema for this university system (Tables can be students, courses and professors)

Define appropriate relationships using primary keys and foreign keys. After designing the schema, write SQL queries to create these tables and insert at least five records into each table.

Remember to ensure referential integrity with foreign key constraints. Your goal is to create a well-structured database that represents the relationships between students, courses, and professors in a typical university setting.

Question 2a

Differentiate between DB and DBMS, explain some common types of DB with examples **(4 points)**

Question 2b **(4 points)**

e_id	e_name	e_salary	e_age	e_gender	e_dept
1	Sam	95000	45	Male	Operations
2	Bob	80000	21	Male	Support
3	Anne	125000	25	Female	Analytics
4	Julia	73000	30	Female	Analytics
5	Matt	159000	33	Male	Sales
6	Jeff	112000	27	Male	Operations

Write a query for selecting record of employee name Matt
Write a query for Deleting all records of table

NUMBER SYSTEM **(10 points)**

Question3:

Solve the following

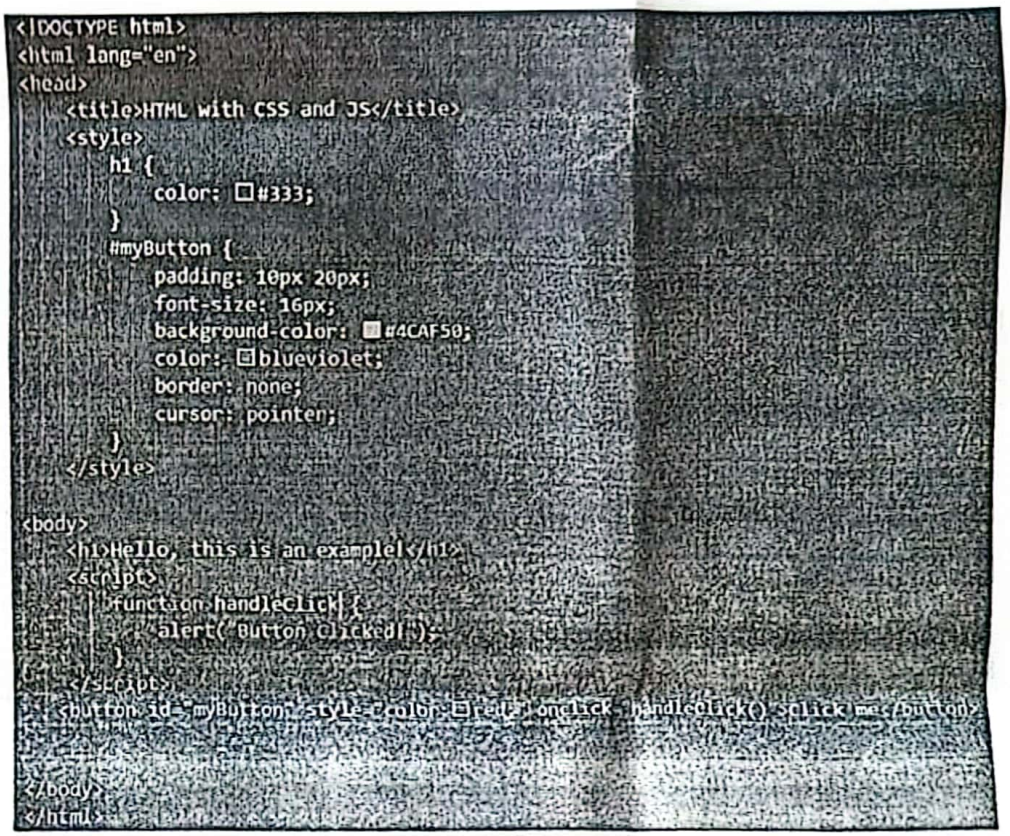
1. $(1001101100)_2 = (\ )_{10}$
2. $(672)_8 = (\ )_{16}$
3. $(EF3A)_{16} = (\ )_8$
4. $(D5)_{16} = (\ )_2$
5. ~~$(80321)_8 = (\ )_2$~~
6. $(FE1213)_{16} = (\ )_8$

[Note : Steps of the above solution should be explained properly]

Web Development **(25 points)**

Question 4

a. Differentiate between <p> tag and
 tag **(1 point)**
b. Differentiate between Color and backgroundcolor **(1 point)**
c. Differentiate between Padding left and margin left **(1 point)**
d. HTML CSS and JS stands for. (full form and their purpose) **(2 points)**
e. Explain Css selectors and their purpose **(2 points)**
f. Types of Css briefly define how can we integrate to .html file **(3 points)**
g. Difference between let const and Var, explain in terms of blocked scope or function scope **(4 points)**
h. Suppose I have to change a text on click of button through htm and JS , write a code **(4 points)**
i. Differentiate between = and == **(2 points)**



```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>HTML with CSS and JS</title>
    <style>
        h1 {
            color: #333;
        }
        #myButton {
            padding: 10px 20px;
            font-size: 16px;
            background-color: #4CAF50;
            color: blueviolet;
            border: none;
            cursor: pointer;
        }
    </style>

<body>
    <h1>Hello, this is an example!</h1>
    <script>
        function handleClick() {
            alert("Button Clicked!");
        }
    </script>
    <button id="myButton" style="color: red;" onclick="handleClick()">Click me</button>

</body>
</html>
```

j. Explain the above code logic , is there any error in the code if yes identify, Identify which css will be applied to button internal or inline (**5 points)**

PROMPT ENGINEERING

Q5 **(10 points)**

Explain language models and write 5 language models application with its usage, how you can make prompts more exact to get desired output **(5 points)**
Explain in your opinion can chat gpt affect developers and others domain jobs (Explain own words) **(5 points)**

FLOW CHART

Q6 **(10 points)**

Identify some of usage and key points to develop a flowchart **(4 points)**

Write only names of shapes for flowchart **(6 points)**