PROBLEM 2 ANSWER:

```sql
CREATE TABLE xml_clients (
    CIDNO SMALLINT PRIMARY KEY NOT NULL,
    NAME VARCHAR(30) NOT NULL,
    ADDRESS XML NOT NULL,
    STATUS VARCHAR(10) NULL,
    CONTACTINFO XML NOT NULL
);
```

```sql
CREATE TABLE xml_employee (
    EMPNO SMALLINT PRIMARY KEY NOT NULL,
    NAME VARCHAR(30) NOT NULL,
    ADDRESS VARCHAR(30) NOT NULL,
    JOB XML NOT NULL,
    CONTACTINFO XML NOT NULL,
    CIDNO SMALLINT NULL,
    FOREIGN KEY (cidno) REFERENCES xml_clients(cidno)
);
```

PROBLEM 3 ANSWER:

```sql
INSERT INTO xml_clients (CIDNO, NAME, ADDRESS, STATUS, CONTACTINFO)
VALUES
(1, 'Beatriz Teofilo',
    '<Address><Street>Sanciangco Street</Street><City>Cebu City</City><Zip>6000</Zip></Address>',
    'Married',
    '<Contact><Phone>09171234567</Phone><Email>beatriz@email.com</Email></Contact>'),

(2, 'Arlan Cardosa',
    '<Address><Street>Sanciangco Street</Street><City>Cebu City</City><Zip>6000</Zip></Address>',
    'Single',
    '<Contact><Phone>09181234567</Phone><Email>arlan@email.com</Email></Contact>'),

(3, 'Pedro Cruz',
    '<Address><Street>789 Rizal Blvd</Street><City>Lapu-Lapu City</City><Zip>6015</Zip></Address>',
    NULL,
    '<Contact><Phone>09221234567</Phone><Email>pedro.cruz@email.com</Email></Contact>');

INSERT INTO xml_employee (EMPNO, NAME, ADDRESS, JOB, CONTACTINFO, CIDNO)
VALUES
(101, 'Maria Alexa De Luna', 'Capitol',
    '<Job><Position>Programmer</Position><Level>Junior</Level><Years>2</Years><Department><Name>IT</Name><Head>John Doe</Head></Department></Job>',
    '<Contact><Phone>09981234567</Phone><Email>mariaalexa@gmail.com</Email></Contact>',
    1),

(102, 'Marianne Mae Calderon', 'Lahug',
    '<Job><Position>Analyst</Position><Level>Entry</Level><Years>1</Years><Department><Name>IT</Name><Head>John Doe</Head></Department></Job>',
    '<Contact><Phone>09991234567</Phone><Email>mariannemae@gmail.com</Email></Contact>',
    2),

(103, 'Shekainah Gaceta', 'Talamban',
    '<Job><Position>Web Developer</Position><Level>MId</Level><Years>6</Years><Department><Name>IT</Name><Head>John Doe</Head></Department></Job>',
    '<Contact><Phone>09201234567</Phone><Email>kaigaceta@gmail.com</Email></Contact>',
    1),

(104, 'Larie Jane Rubi', 'Guadalupe',
    '<Job><Position>UI Designer</Position><Level>Mid</Level><Years>8</Years><Department><Name>IT</Name><Head>John Doe</Head></Department></Job>',
    '<Contact><Phone>09081234567</Phone><Email>heartrubi@gmail.com</Email></Contact>',
    NULL),

(105, 'Cedric Conrelio', 'Capitol',
    '<Job><Position>System Admin</Position><Level>Mid</Level><Years>10</Years><Department><Name>IT</Name><Head>John Doe</Head></Department></Job>',
    '<Contact><Phone>09121234567</Phone><Email>cedcedcornelio@gmail.com</Email></Contact>',
    3);

DELETE FROM xml_employee
```

PROBLEM 4 ANSWER:

```sql
SELECT
    EMPNO,
    NAME,
    JOB.value('(/Job/Position)[1]', 'VARCHAR(30)') AS Position
FROM
    xml_employee
WHERE
    JOB.value('(/Job/Years)[1]', 'INT') > 5;
```

PROBLEM 5 ANSWER:

```sql
SELECT
    E.EMPNO,
    E.NAME ,
    E.JOB.value('(/Job/Position)[1]', 'VARCHAR(30)') AS JOBPOSITION,
    E.NAME AS CLIENTNAME,
    C.CONTACTINFO
FROM
    xml_employee E
JOIN
    xml_clients C ON E.CIDNO = C.CIDNO;
```

PROBLEM 6 ANSWER:

```sql
SELECT
    EMPNO,
    NAME AS EmployeeName,
    JOB.value('(/Job/Position)[1]', 'VARCHAR(30)') AS JobPosition,
    JOB.value('(/Job/Level)[1]', 'VARCHAR(20)') AS JobLevel,
    JOB.value('(/Job/Years)[1]', 'INT') AS YearsServed
FROM
    xml_employee;
```

PROBLEM 7 ANSWER:

```sql
SELECT
    CIDNO,
    NAME,
    ADDRESS.value('(/Address/Street)[1]', 'VARCHAR(50)') AS Street,
    ADDRESS.value('(/Address/City)[1]', 'VARCHAR(30)') AS City,
    ADDRESS.value('(/Address/Zip)[1]', 'VARCHAR(10)') AS Zip
FROM
    xml_clients
WHERE
    STATUS = 'Single';
```

PROBLEM 8 ANSWER:

```sql
SELECT
    CIDNO,
    NAME,
    ADDRESS.value('(/Address/Street)[1]', 'VARCHAR(50)') AS Street,
    ADDRESS.value('(/Address/City)[1]', 'VARCHAR(30)') AS City,
    ADDRESS.value('(/Address/Zip)[1]', 'VARCHAR(10)') AS Zip,
    CONTACTINFO.value('(/Contact/Phone)[1]', 'VARCHAR(15)') AS Phone,
    CONTACTINFO.value('(/Contact/Email)[1]', 'VARCHAR(50)') AS Email
FROM
    xml_clients;
```

PROBLEM 9 ANSWER:

```sql
SELECT
    JOB.value('(/Job/Department/Name)[1]', 'VARCHAR(30)') AS DepartmentName,
    JOB.value('(/Job/Department/Head)[1]', 'VARCHAR(30)') AS DepartmentHead,
    JOB.value('(/Job/Position)[1]', 'VARCHAR(30)') AS Position
FROM
    xml_employee
WHERE
    JOB.value('(/Job/Years)[1]', 'INT') < 5;
```

PROBLEM 10 ANSWER:

```sql
SELECT EMPNO, NAME,
    JOB.query('
        <JobDetails>
            <Position>{./Job/Position/text()}</Position>
            <Level>{./Job/Level/text()}</Level>
            <Years>{./Job/Years/text()}</Years>
            <Department>
                <Name>{./Job/Department/Name/text()}</Name>
                <Head>{./Job/Department/Head/text()}</Head>
            </Department>
        </JobDetails>') AS Job_Hierarchy
FROM xml_employee;
```

PROBLEM 11 ANSWER:

```sql
SELECT CIDNO, NAME,
    CONTACTINFO.query('
        <ContactDetails>
            <Phone>{./Contact/Phone/text()}</Phone>
            <Email>{./Contact/Email/text()}</Email>
        </ContactDetails>') AS Contact_Hierarchy
FROM xml_clients;
```

PROBLEM 12 ANSWER:

```sql
SELECT CIDNO, NAME,
    CONTACTINFO.query('
        for $contact in ./Contact
        where $contact/Phone = "09181234567"  (: Example predicate: phone number is 09171234567 :)
        return
            <ContactDetails>
                <Phone>{ $contact/Phone/text() }</Phone>
                <Email>{ $contact/Email/text() }</Email>
            </ContactDetails>') AS Contact_Hierarchy
FROM xml_clients;
```

PROBLEM 13 ANSWER:

```sql
SELECT EMPNO, NAME,
    JOB.query('
        for $job in ./Job
        return
            <tr>
                <td>{ $job/Position/text() }</td>
                <td>{ $job/Level/text() }</td>
                <td>{ $job/Years/text() }</td>
                <td>{ $job/Department/Name/text() }</td>
                <td>{ $job/Department/Head/text() }</td>
            </tr>') AS Job_HTML
FROM xml_employee;
```

PROBLEM 14 ANSWER:

```sql
SELECT EMPNO, NAME,
    JOB.query('
        for $job in ./Job
        return
            <PositionCategory>
                {
                    if ($job/Years < 3) then "Junior"
                    else if ($job/Years >= 3 and $job/Years < 6) then "Mid"
                    else "Senior"
                }
            </PositionCategory>') AS Position_Category
FROM xml_employee;
```