Question I (Multiple choice questions) (10 points)

In the following choose *<u>one correct statement</u>* for each statement by *circling the correct answer*

1. Which of the following is used to define the structure of an XML document?
a. XQuery b. DTD c. XSLT d. XPath

2. Which of the following is used to transform an XML document into another format such as HTML or PDF?
a. XQuery b. DTD c. XSLT d. XPath

3. Which of the following is used to query XML data?
a. XQuery b. DTD c. XSLT d. XPath

4. Which of the following is used to locate specific elements or attributes within an XML document?
a. XQuery b. DTD c. XSLT d. XPath

5. Which of the following is a database that is spread across multiple sites or locations?
a. Centralized database b. Distributed database c. Relational database d. Object-oriented database

6. Which of the following is used to define the structure and content of an XML document?
a. XQuery b. DTD c. XSLT d. XPath

7. Which of the following is a language used to query and transform XML data?
a. SQL b. Java c. XQuery d. C++

8. Which of the following is used to define the presentation of an XML document?
a. XQuery b. DTD c. XSLT d. XPath

9. Which of the following is a language used to access and manipulate data stored in XML format?
a. SQL b. Java c. XQuery d. C++

10. Which of the following is a database that is stored on a single computer or server?
a. Centralized database b. Distributed database c. Relational database d. Object-oriented database

Question 2)

Write an XML document that represents a list of employees, with each employee having a name, job title, department, and salary.

Question III (5 points)

Write an XSLT stylesheet that transforms an XML document with the following structure:

<orders><order> <item>...</item>
<price>...</price><quantity>...</quantity></order>...</orders> into an HTML table with three columns: "Item", "Price", and "Quantity", and a fourth column that calculates the total price of each order.

Question V (4 points)

Create an external DTD for an XML document with the following structure: <bookstore><book id="1">...</book><book id="2">...</book>...</bookstore>. Ensure that the id attribute of the book element is required and unique.

Question VI (8 points 2 points for each part)
Consider the following XML code:

```
<library>
  <book>
    <title>The Great Gatsby</title>
    <author>F. Scott Fitzgerald</author>
    <price>15.99</price>
  </book>
  <book>
    <title>To Kill a Mockingbird</title>
    <author>Harper Lee</author>
    <price>12.99</price>
  </book>
  <book>
    <title>The Catcher in the Rye</title>
    <author>J.D. Salinger</author>
    <price>9.99</price>
  </book>
</library>
```

A- Using the above XML, write an XPath expression that selects all `<book>` elements that have a <price>` element with a value greater than 20.

B- Using the above XML, write an XPath expression that selects the <title> element of the first <book> element in the following XML document: