SQL AND NOSQL

MID TERM EXAM

1. Choice questions:
2. NoSQL databases is used mainly for handling large volumes of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ data.
3. Unstructured
4. Structured
5. Semi-structured
6. All of the mentioned
7. The \_\_\_\_\_\_\_\_\_\_\_ operation, denoted by −, allows us to find tuples that are in one relation but are not in another.
8. Union
9. Set-difference
10. Difference
11. Intersection
12. In which of the following can many entity instances of one type be related to many entity instances of another type?
13. One-to-One Relationship
14. One-to-Many Relationship
15. Many-to-Many Relationship
16. Composite Relationship
17. Relational Algebra does not have
18. Selection operator
19. Projection operator
20. Aggregation operators
21. Division operator
22. Normal form which only includes indivisible values or single atomic values is classified as
23. Third normal form
24. First normal form
25. Second normal form
26. Fourth normal form
27. Which of the SQL statements is correct?

a) SELECT Username AND Password FROM Users

b) SELECT Username, Password FROM Users

c) SELECT Username, Password WHERE Username = 'user1'

d) None of these

1. A UNION query is which of the following?
2. Combines the output from no more than two queries and must include the same number of columns.
3. Combines the output from no more than two queries and does not include the same number of columns.
4. Combines the output from multiple queries and must include the same number of columns.
5. Combines the output from multiple queries and does not include the same number of columns.
6. Disadvantages of DTD are

(i) DTDs are not extensible

(ii)DTDs are not in to support for namespaces

(iii)There is no provision for inheritance from one DTDs to another

a) (i) is correct

b) (i),(ii) are correct

c) (ii),(iii) are correct

d) (i),(ii),(iii) are correct

1. Which of the following XML documents are well-formed?
2. <firstElement>some text goes here

<secondElement>another text goes here</secondElement>

</firstElement>

1. <firstElement>some text goes here</firstElement>

<secondElement> another text goes here</secondElement>

1. <firstElement>some text goes here

<secondElement> another text goes here</firstElement>

</secondElement>

1. </firstElement>some text goes here

</secondElement>another text goes here

<firstElement>

1. Why do we use exist method in Xquery?
2. To determine if the XML data contains a certain node
3. To examine the XML and return back a scalar value
4. To Shred the XML nodes of the XML data into relational columns
5. To search inside xml data types
6. Consider the following two tables:

Table Name: Employee

Attributes: Employee\_id, First\_name, Last\_name, Salary, Joining\_date, Department

Table Name: Incentives

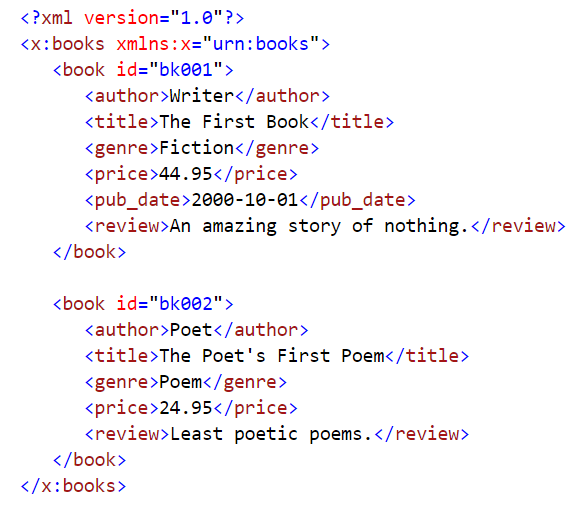
Attributes: Employee\_id, Incentive\_date, Incentive\_amount

Write SQLs for the following scenarios:

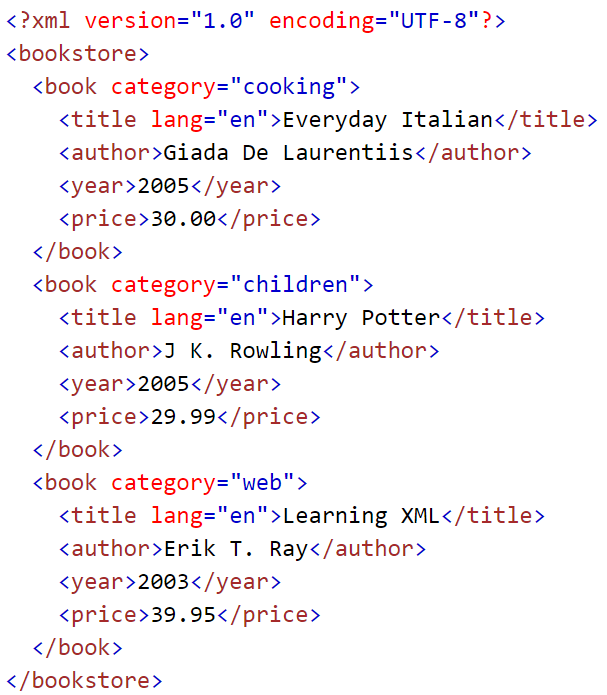
1. Get First\_Name from employee table in upper case
2. Get unique DEPARTMENT from employee table
3. Select first 3 characters of FIRST\_NAME from EMPLOYEE
4. Get length of FIRST\_NAME from employee table
5. Get FIRST\_NAME, Joining year, Joining Month and Joining Date from employee table
6. Get all employee details from the employee table order by First\_Name Ascending and Salary descending
7. Get employee details from employee table whose employee name are not “John” and “Roy”
8. Get employee details from employee table whose Salary between 500000 and 800000
9. Get employee details from employee table whose joining month is “January”
10. Get department, total salary with respect to a department from employee table order by total salary descending
11. Write the DTD for the following xml file:



1. Write XML schema for the following XML file:



1. Write XML tree for the following XML file:



1. For the xml below, answer the questions:

<?xml version="1.0" encoding="UTF-8"?>  
  
<bookstore>  
  
<book category="cooking">  
  <title lang="en">Everyday Italian</title>  
  <author>Giada De Laurentiis</author>  
  <year>2005</year>  
  <price>30.00</price>  
</book>  
  
<book category="children">  
  <title lang="en">Harry Potter</title>  
  <author>J K. Rowling</author>  
  <year>2005</year>  
  <price>29.99</price>  
</book>  
  
<book category="web">  
  <title lang="en">XQuery Kick Start</title>  
  <author>James McGovern</author>  
  <author>Per Bothner</author>  
  <author>Kurt Cagle</author>  
  <author>James Linn</author>  
  <author>Vaidyanathan Nagarajan</author>  
  <year>2003</year>  
  <price>49.99</price>  
</book>  
  
<book category="web">  
  <title lang="en">Learning XML</title>  
  <author>Erik T. Ray</author>  
  <year>2003</year>  
  <price>39.95</price>  
</book>  
  
</bookstore>

Write XPaths for the following scenarios:

1. Select the first book element that is the child of the bookstore element
2. Selects the last but one book element that is the child of the bookstore element
3. Select the first two book elements that are children of the bookstore element
4. Select all the title elements that have a "lang" attribute with a value of "en"
5. Select all the title elements of the book elements of the bookstore element that have a price element with a value greater than 35.00
6. General SQL and NoSQL questions:
7. What is the difference between JOIN and UNION?
8. What are aggregate and scalar functions? Give examples
9. What is the difference between NoSQL & Mysql DBs’?
10. When should a NoSQL database be used instead of a relational database?