


<p>Course Title: Advanced Databases  Date: 27 /03 / 2012  No. of Questions: 5 Questions  Time: 1.5 hours  Using Calculator (No)</p>	<p>University of Palestine</p>  <p>Midterm Exam  2<sup>nd</sup> semester 2011/2012  Total Grade: 20</p>	<p>Instructor Name: Mr.Ahmed Al Astal  College Name: IT, SWE  Dep. / Specialist: _____  Using Dictionary (No)</p>
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<b>First Question</b>	<b>No. of Branches (1)</b>	<b>(4/20)</b>
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<b>Q1 B1</b>		<b>(4/4)</b>
<p><b>Choose the best Answer:</b></p>		
<p>1) <b>What does XML stand for:</b></p>		
<ul style="list-style-type: none"> <li>a) eXtra Modern Link</li> <li>b) Example Markup Language.</li> <li>c) X-Markup Language.</li> <li>d) eXtensible Markup Language</li> </ul>		
<p>2) <b>What does DTD stand for:</b></p>		
<ul style="list-style-type: none"> <li>a) Document Type Definition</li> <li>b) Dynamic Type Definition</li> <li>c) Direct Type Definition.</li> <li>d) None of the above.</li> </ul>		
<p>3) <b>Which statement is true?</b></p>		
<ul style="list-style-type: none"> <li>a) All XML documents must have a DTD</li> <li>b) All XML elements must be properly closed</li> <li>c) All XML elements must be lower case</li> <li>d) All the statements are true.</li> </ul>		
<p>4) <b>Is this a "well formed" XML document?</b></p>		
<pre>&lt;note&gt; &lt;to&gt;Tove&lt;/to&gt; &lt;from&gt;Jani&lt;/from&gt; &lt;heading&gt;Reminder&lt;/heading&gt; &lt;body&gt;Don't forget me this weekend!&lt;/body&gt; &lt;/note&gt;</pre>		
<ul style="list-style-type: none"> <li>a) True</li> <li>b) False</li> </ul>		
<p>5) <b>Which of the following is responsible for initiating actions such as moving the disk arm to the right track and actually reading or writing the data:</b></p>		
<ul style="list-style-type: none"> <li>a) Disk Controller</li> <li>b) System Bus</li> <li>c) The Buffer Manager</li> <li>d) None of the above</li> </ul>		
<p>6) <b>Splitting the data of each byte across multiple disks is called:</b></p>		
<ul style="list-style-type: none"> <li>a) Fragmentation</li> <li>b) Hot Swapping</li> <li>c) Pinning blocks</li> <li>d) Stripping</li> </ul>		
<p>7) <b>Which of the following RAID Levels never used because of subsuming:</b></p>		
<ul style="list-style-type: none"> <li>a) RAID level 0</li> <li>b) RAID level 1</li> <li>c) RAID level 2</li> <li>d) RAID level 6</li> </ul>		

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- 8) **Organizing records in files such that record can be placed anywhere in the file where there is space is called:**
- Hash based organization.
  - Sequential organization.
  - Multi-table clustering file organization
  - Heap organization

**Second Question** **No. of Branches (1)** **(4/20)**

**Q2 B1** **(4/4)**

**Essay Questions**

- 1) Explain briefly the three main performance measures of disks?
- 2) What is the difference between Bit-Level Stripping and Block-Level Stripping?  
What levels of RAID Systems use each of them?
- 3) What is the difference between DAID level 1 and RAID level 5?
- 4) Explain the strategy of buffering, what is it, how it works, and what are the replacement polices it uses to make an available space for incoming block?

**Third Question** **No. of Branches (1)** **(4/20)**

**Q3 B1**

Given the following Instance of the two tables person and orders.

The "Persons" table:

Id	LastName	FirstName
1	Hansen	Ola
2	Svendson	Tove
3	Pettersen	Kari

The "Orders" table:

O_Id	OrderNo	P_Id
1	77895	3
2	44678	3
3	22456	1
4	24562	1
5	34764	15

Show the results of each of the following Queries

- 1) `SELECT Persons.LastName, Persons.FirstName, Orders.OrderNo  
FROM Persons  
LEFT JOIN Orders  
ON Persons.P_Id=Orders.P_Id`
- 2) `SELECT Persons.LastName, Persons.FirstName, Orders.OrderNo  
FROM Persons  
FULL JOIN Orders  
ON Persons.P_Id=Orders.P_Id`

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Fourth Question

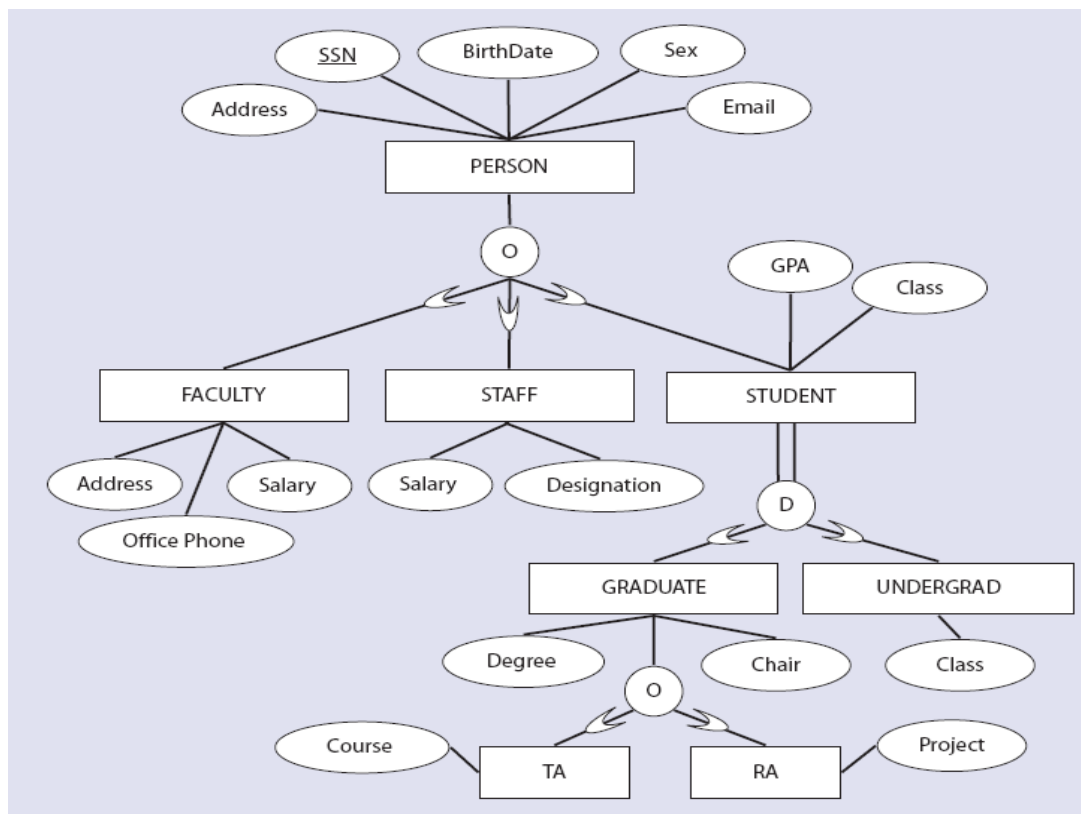
No. of Branches (1)

(5/20)

**Q4 B1**


**(5/5)**

Given the following EER Diagram:



Solve the following Questions:

1. How many Super Entities in the diagram? List them?
2. How many Sub Entities in the diagram? List them and their super entity?
3. What does the letter D in the relation between student entity and its related entities mean?
4. List the attributes of the entity TA?
5. Map the above EER Diagram into a Relational Schema diagram?

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<b>Fifth Question</b>	<b>No. of Branches (1)</b>	<b>(3/20)</b>
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**Q5 B1** **(3/3)**

Given the following DTD , Show a sample XML data that corresponds to this DTD

```

<!ELEMENT message ( email ) >
<!ELEMENT email (header, subject?, text+) >
<!ATTLIST email reply ( yes | no ) "no" >
<!ELEMENT header ( sender, recipient*, date?) >
<!ELEMENT subject ( #PCDATA ) >
<!ELEMENT sender ( #PCDATA ) >
<!ELEMENT recipient ( #PCDATA ) >
<!ELEMENT date ( #PCDATA ) >
<!ELEMENT text ( #PCDATA ) >

```