MySQL

1. Design a database for a very simple online shop. The database should store basic information about products (name, price), manufacturers (name), category tree (name, position in the tree, order in the current branch). It should also store the association between mentioned items – a product has only one manufacturer but it can be assigned to many categories. Categories' and products' names can differ between language versions so the name for each version has to be stored too. There is no strictly defined set of language versions – it may change with time.

2. We have a database with the following structure:

```
CREATE TABLE `Companies` (
  `Id` INT UNSIGNED AUTO_INCREMENT PRIMARY KEY,
  `Name` VARCHAR(255)
) ENGINE=InnoDB CHARSET=utf8;

CREATE TABLE `Branches` (
  `Id` INT UNSIGNED AUTO_INCREMENT PRIMARY KEY,
  `Name` VARCHAR(255),
  `CompanyId` INT UNSIGNED
) ENGINE=InnoDB CHARSET=utf8;
```

Provide SQL statements for the following

a) Create a table storing country regions (we'll have only one country, no need to store information about it) – only name of the region is a relevant information

b) Provide a statement for associating branches to regions (a branch can belong only to one region)

c) Provide a statement causing deleting of a branch whenever an associated company is deleted

d) Point the fields from the following structure that, in your opinion, should have indices

PHP

3. Rewrite the following code to improve it's readability, logical structure and performance. Database structure is defined in the previous task. The goal is to show a table of branches (branch name & associated company name) ordered alphabetically by company name and then by branch name. You can use any standard PHP database access (i.e. mysqli, PDO). You can ommit the code used for establishing and closing database connection.

```
….
$r=mysql_query('SELECT * FROM Companies');

$c_l=array();
while($r_c=mysql_fetch_array($r))
{
  $c_l[]=$r_c;
}
usort($c_l,'cmpnm');

echo '<table>';
foreach($c_l as $c)
{
  $b_l=array();
  $r=mysql_query('SELECT * FROM Branches WHERE CompanyId='.$c['Id']);
  while($r_b=mysql_fetch_array($r))
  {
    $b_l[]=$r_b;
  }
  usort($b_l,'cmpnm');

  foreach($b_l as $b)
  {
    echo '<tr><td>'.$c['Name'].'</td><td>'.$b['Name'].'</td></tr>';
  }
}
echo '</table>';

function cmpnm($a,$b)
{
  return strcmp($a['Name'],$b['Name']);
}
…
```

JavaScript

4. Without changing the HTML shown below, write a code that'll select / unselect all of the checkboxes in the form and send them with AJAX to whatever is the value of form's action property. Use of jQuery is preferred but not essential.

```
<form method="post" action="submit.php">
  <ul>
    <li>
      <input type="checkbox" name="chk[]" value="1"/>
   </li>
   <li>
      <input type="checkbox" name="chk[]" value="2"/>
   </li>
  <li>
      <input type="checkbox" name="chk[]" value="3"/>
   </li>
  <li>
      <input type="checkbox" name="chk[]" value="4"/>
   </li>
  <li>
      <input type="checkbox" name="chk[]" value="5"/>
   </li>
  </ul>
</form>
<a href="#">Select all</a>
```