## Exercise 1 – Northwind Queries (40 marks: 5 for each question)

* 1. **Write a query that lists all Customers in either Paris or London. Include Customer ID, Company Name and all address fields.**

SELECT CustomerID, CompanyName, Address + ' ' + City + ' ' + PostalCode + ' ' + Country AS 'Address Info' FROM Customers

WHERE City='Paris' OR City='London';

* 1. **List all products stored in bottles.**

SELECT ProductName, QuantityPerUnit FROM products

WHERE QuantityPerUnit LIKE '%bottle%';

* 1. **Repeat question above, but add in the Supplier Name and Country.**

SELECT ProductName, QuantityPerUnit, suppliers.CompanyName, suppliers.Country FROM products

JOIN suppliers ON products.SupplierID=Suppliers.SupplierID

WHERE QuantityPerUnit LIKE '%bottle%';

* 1. **Write an SQL Statement that shows how many products there are in each category. Include Category Name in result set and list the highest number first.**

SELECT CategoryName, UnitsInStock FROM products

JOIN Categories ON Categories.CategoryID=Products.CategoryID

ORDER BY UnitsInStock DESC;

* 1. **List all UK employees using concatenation to join their title of courtesy, first name and last name together. Also include their city of residence.**

SELECT TitleOfCourtesy + ', ' + FirstName + ', ' + LastName AS 'Full Name' , City FROM Employees

WHERE Country='UK';

* 1. **List Sales Totals for all Sales Regions (via the Territories table using 4 joins) with a Sales Total greater than 1,000,000. Use rounding or FORMAT to present the numbers.**

SELECT RegionDescription, ROUND(SUM(UnitPrice \* Quantity), 2) AS Total\_Sales FROM Territories

JOIN Region ON Territories.RegionID=Region.RegionID

JOIN EmployeeTerritories ON Territories.TerritoryID=EmployeeTerritories.TerritoryID

JOIN Orders ON Orders.EmployeeID=EmployeeTerritories.EmployeeID

JOIN [Order Details] ON [Order Details].OrderID=Orders.OrderID

GROUP BY RegionDescription HAVING SUM(UnitPrice \* Quantity) > 1000000;

* 1. **Count how many Orders have a Freight amount greater than 100.00 and either USA or UK as Ship Country.**

SELECT COUNT(\*) FROM Orders

WHERE Freight>100 AND ShipCountry='USA' OR ShipCountry='UK';

* 1. **Write an SQL Statement to identify the Order Number of the Order with the highest amount of discount applied to that order.**

SELECT OrderID, (UnitPrice \* Discount) AS TotalDiscount FROM [Order Details]

WHERE (UnitPrice \* Discount) =

(SELECT MAX(unitPrice \* Discount) FROM [Order Details])

## Exercise 2 – Create Spartans Table (20 marks – 10 each)

2.1 Write the correct SQL statement to create the following table:

Spartans Table – include details about all the Spartans on this course. Separate Title, First Name and Last Name into separate columns, and include University attended, course taken and mark achieved. Add any other columns you feel would be appropriate.

IMPORTANT NOTE: For data protection reasons do NOT include date of birth in this exercise.

CREATE TABLE Spartans\_Table (

Title CHAR(3)

First\_Name VARCHAR (30)

Last\_Name VARCHAR (30)

University VARCHAR(30)

Course VARCHAR (30)

Mark CHAR (3)

Passport CHAR (9)

Email VARCHAR(50));

2.2 Write SQL statements to add the details of the Spartans in your course to the table you have created.

INSERT INTO Spartans\_Table(Title, First\_Name, Last\_Name, University, Course, Mark, Passport, Email)

VALUES ('Mr.', 'Victor', 'Granados Jimenez', 'Granada', 'Information and Documentation', '2nd', 'CX2393874', 'Vjimenez@Spartaglobal.com');

## Exercise 3 – Northwind Data Analysis linked to Excel (30 marks)

Write SQL statements to extract the data required for the following charts (create these in Excel):

3.1 **List all Employees from the Employees table and who they report to. No Excel required. (5 Marks)**

SELECT E1.TitleOfCourtesy + ' ' + E1.FirstName + ' ' + E1.LastName AS 'Full Name', E1.Title, E2.FirstName + ' ' + E2.LastName AS 'ReportTo' FROM Employees E1

LEFT JOIN Employees E2 ON E1.ReportsTo=E2.EmployeeID;

**3.2 List all Suppliers with total sales over $10,000 in the Order Details table. Include the Company Name from the Suppliers Table and present as a bar chart as below: (5 Marks)**

SELECT Suppliers.CompanyName, ROUND(SUM([Order Details].UnitPrice \* [Order Details].Quantity),0) AS 'Total Sales' FROM [Order Details]

JOIN Orders ON [Order Details].OrderID=Orders.OrderID

JOIN Products ON Products.ProductID=[Order Details].ProductID

JOIN Suppliers ON Suppliers.SupplierID=Products.SupplierID

GROUP BY CompanyName HAVING ROUND(SUM([Order Details].UnitPrice \* [Order Details].Quantity),0) > 10000

ORDER BY ROUND(SUM([Order Details].UnitPrice \* [Order Details].Quantity),0) DESC;

**3.3 List the Top 10 Customers YTD for the latest year in the Orders file. Based on total value of orders shipped. No Excel required. (10 Marks)**

SELECT TOP 10 CompanyName, ROUND(SUM((UnitPrice \* Quantity) \* (1 - Discount)),0) AS 'total value of orders shipped' FROM [Order Details]

JOIN Orders ON Orders.OrderID=[Order Details].OrderID

JOIN Customers ON Customers.CustomerID=Orders.CustomerID

WHERE ShippedDate IS NOT NULL AND YEAR(ShippedDate)=1998

GROUP BY CompanyName

ORDER BY 'total value of orders shipped' DESC;

**3.4 Plot the Average Ship Time by month for all data in the Orders Table using a line chart as below. (10 Marks)**

SELECT AVG(DATEDIFF(d,OrderDate,ShippedDate)) AS 'Average ship time in days',

YEAR(OrderDate) AS year ,MONTH(OrderDate) AS month FROM Orders

GROUP BY YEAR(OrderDate), MONTH(OrderDate)

ORDER BY YEAR(OrderDate), MONTH(OrderDate) ASC;