

# SOLUTIONS

## Section A Multiple Choice

- 1 **B.** The correct syntax is `SELECT * FROM BasicTable`  
Sort orders are not required for `SELECT` statements.
- 2 **D.** Although the other statements may be true, only declarative actually states what type of language SQL is. (B was accepted tho)
- 3 **B and C.** Relational database systems, the foundation for the SQL language and its capabilities, are built to be more accessible, and are much more contained, typically having only one physical file on disk that contains the database and index files.
- 4 **B.** Fields are the equivalent of cells on a spreadsheet, containing the working information that is stored in the system.
- 5 **A.** Rows don't contain databases. Rather, rows contain the columns of information in the table.
6. **B** Indexes do not control the sort order of information. To control the sort order, use the `ORDER BY` clause.
- 7 **D.** You use the `DELETE FROM` statement to remove rows from the table. You'll also need to indicate the customer ID (unique value) to indicate which row to remove.
- 8 **D.** Normalization refers to the process of making sure that you have one and only one source of information in your tables. For example, you don't want to store the customer's address in more than one location. To do so would mean that you would have to update more than one location if the address changes.
- 9 **C.** The `ORDER BY` clause will sort the results for you. Indexes are used by the engine to retrieve information but not to produce sorted results. You must use the `ORDER BY` clause if you need to see results in any particular order.

## Section B

### Question 1

- a) Repeating groups to be eliminated  
Proper primary key must be selected/created which uniquely identify rows
- b) Write each key component on a separate line  
Write original Key on the last line  
Each Key component should be used as a new table  
Write dependant attributes after the Key on each line
- c) Create separate tables in order to remove transitive dependencies

### Question 2

Primary Key – Used to uniquely identify a row within a table

Foreign Key – A Key referencing the primary key in another table. Used in creating table joins and relations.

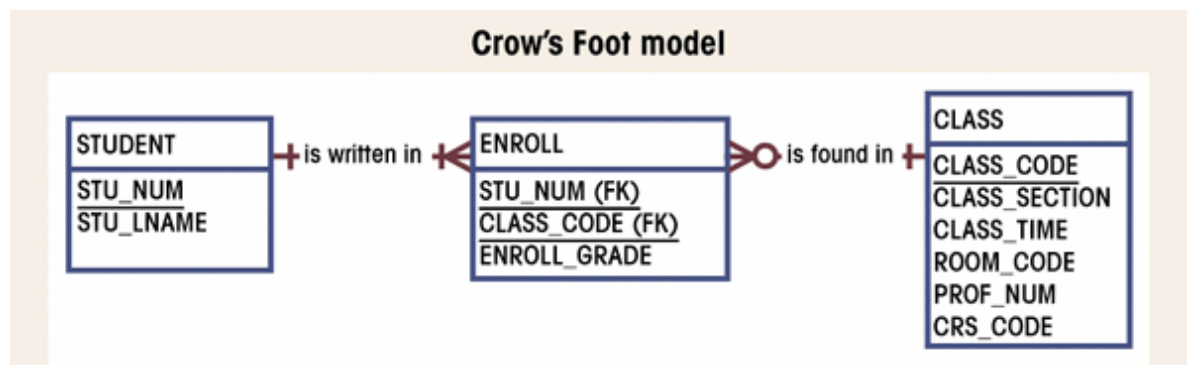
### Question 3

SELECT	UNION
PROJECT	INTERSECT
PRODUCT	DIFFERENCE
JOIN	DIVIDE

### Question 4

M:N relations are difficult to implement within the Relational database structures.

They can also make ER Diagramming difficult. The solution is to create an artificial entity reducing the M:N relation to two 1:M relations.



### Question 5

An 'island of information' is when there are multiple incompatible data base implementations within an organisation, or where sharing data between compatible implementations is made difficult use to differing table design and structure. A downside is that data is often unnecessarily duplicated

### Question 6

Employee Table	
Employee ID #	Last Name
02	Wynkoop
01	Smith

Task Table	
TASK ID #	TASK Description
1	Tutor Meeting
2	Create budget

3	Exam Timetable
4	Set Exams

Task Assignment Table		
Task ID #	Employee ID #	Due Date
1	02	02/17/2003
2	02	01/01/2003
3	01	02/09/2003
4	02	02/01/2003

### Question 7

**Numeric** – High precision data type. Can specify the scale and precision. Will return the value stored. Recommended for Currency

**Real** – Imprecise data type. Data is stored as closely as possible given internal representation limitations.

**Double** – Variable precision floating point number also imprecise. Problems comparing Floating point numbers.

### Question 8

Different data types have different physical storage requirements, and different speeds of processing. One should choose a size that is most appropriate for the range of data to be stored. Precision is another factor, particularly when storing dates, times and floating point numbers

### Question 9

Flags can be used to indicate state where there is no corresponding value in the related table. Caution should be exercised where any type of mathematical operation will be performed on the attribute field. The use of flags should be compare with that of NULLS