AQA Computer Science A-Level 4.10.4 Structured Query Language (SQL) Past Paper Mark Schemes

Additional Specimen Paper 2

clauses must be present, but there could be mistakes in the marks awarded for AO2 e.g. an incorrect or missing condition

Example Solution

SELECT BookID, Title, Author, Price,
Category
FROM Book
WHERE Author = "David Ferguson"
AND Price < 25
ORDER BY Price DESC

Additional Guidance

AO2 marks:

Mark(s) can be awarded for the correct logical conditions even if the required table is not identified as being used by the query

AO3 marks:

Accept table names before fieldnames.

Accept use of Alias/AS command eg FROM Book AS B or FROM Book B then use of B as table name.

Accept INNER JOIN written as one word i.e. INNERJOIN

Accept ORDER BY written as one word i.e. ORDERBY.

Accept insertion of spaces into fieldnames.

Accept use of currency formatting for the 25 value. Ignore unnecessary brackets.

DPT. for unnecessary punctuation – allow one semicolon at the very end of the statement, but not at the end of each clause.

DPT, for fieldname before table name.

<u>June 2011 Comp 3</u>

7	(c)	ProductNumber INTEGER PRIMARY KEY ProductNumber INTEGER PRIMARY KEY(ProductNumber) ProductPrice SMALLMONEY ProductDescription VARCHAR(50) QuantityInStock INTEGER 1 mark for ProductNumber correct with appropriate type and identified as primary key 1 mark for two other fields correct with appropriate types OR 2 marks for all three other fields correct with appropriate types A any sensible types / field lengths. eg: For ProductNumber: integer, numeric, char, varchar, text, nchar, nvarchar, ntext, longvarchar, varchar2, nvarchar2 For ProductPrice: smallmoney, money, currency, float, real, decimal, dec, double, double precision, numeric For ProductDescription: varchar, char, varchar, text, nchar, nvarchar, ntext, longvarchar, varchar2, nvarchar2 For QuantityInStock: integer, numeric, float, real, decimal, dec, double, double precision, numeric A insertion of other unnecessary but valid SQL commands e.g. AUTO	
		MAX 2 if additional fields added	3

7	(f)	EITHER
		SELECT ProductNumber, ProductDescription, ProductPrice, Quantity
		FROM Product, OrderLine
		WHERE OrderNumber = 4013
		AND Product.ProductNumber = OrderLine.ProductNumber
		ORDER BY ProductNumber ASC
		1 mark for SELECT clause with correct four fields
		1 mark for FROM clause with correct two tables
		1 mark for OrderNumber = 4013
		1 mark for clause linking tables on the common field with no additional unnecessary clauses added
		1 mark for ORDER BY ProductNumber, ASC is optional
		Timark for ONDER DT Floddotrumber, Add is optional
		OR
		SELECT ProductNumber, ProductDescription, ProductPrice, Quantity
		FROM Product INNERJOIN OrderLine ON
		Product.ProductNumber = OrderLine.ProductNumber
		WHERE OrderNumber = 4013
		ORDER BY ProductNumber ASC
		1 mark for SELECT clause with correct four fields
		1 mark for correct two tables in FROM clause
		1 mark for INNERJOIN together with ON
		Product.ProductNumber = OrderLine.ProductNumber and
		no other joins
		1 mark for OrderNumber = 4013

1 mark for ORDER BY ProductNumber, ASC is optional

In both solutions:

Do not award mark for SELECT clause if extra attributes listed.

Do not award mark for FROM clause if extra tables listed.

Do not award mark for ORDER BY clause if order descending.

Only award two marks for conditions if they are connected by AND. Otherwise just award one of the marks.

If candidate appears to have written two queries e.g. there are two SELECT commands then mark the first query.

A table names before fieldnames. i.e. TableName.FieldName

A " or ' as delimiters for 4013

A ascending, (ASC) for ASC

R if ASC written before ProductNumber in ORDER BY

I Spaces inserted into fieldnames e.g. Product Number

Accept answers that candidates have surrounded by "ExecuteSQL()".

If any of the errors listed below are made, they should result in at most one mark being lost. If the mistake is made more than once then on subsequent occasions, providing that the meaning is clear, the mistake should be ignored:

 the addition of unnecessary punctuation such as semicolons the fieldname being written before the tablename

5

<u>June 2012 Comp 3</u>

9	(d)	Solution 1:	
		SELECT EmailAddress, Forename, Surname	
		FROM Book, Member, Loan	
		WHERE Author = 'Lucas Bailey' AND	
		Book.BookID=Loan.BookID AND	
		Member.MemberID=Loan.MemberID	
		1 mark for correct three fields in SELECT clause	
		1 mark for correct three tables in FROM clause	
		1 mark for Author = 'Lucas Bailey'	
		1 mark for Book.BookID=Loan.BookID linked by AND	
		1 mark for Member.MemberID=Loan.MemberID linked by AND	
		Solution 2:	
		SELECT EmailAddress, Forename, Surname	
		FROM Book INNER JOIN Loan ON Book.BookID=Loan.BookID	
		INNER JOIN Member on	
		Member.MemberID=Loan.MemberID	
		WHERE Author = 'Lucas Bailey'	
		1 mark for correct three fields in SELECT clause	
		1 mark for correct three tables in FROM clause	
		1 mark for join from Member to Loan	
		1 mark for join from Loan to Book	
		1 mark for Author = 'Lucas Bailey'	
		Note: Joins do not need to be done in same order as example	
		Do not award mark for SELECT clause if extra attributes listed. Do not award mark for 'Lucas Bailey' unless it is enclosed in	
		single or double quotation marks. Accept table names before fieldnames.	
		Accept use of Alias/AS command e.g. FROM Member as M then	
		use of M as table name.	
		Accept insertion of spaces into fieldnames	
		DPT for unnecessary punctuation - allow one semicolon at the	
		very end of the statement, but not at the end of each clause.	
		Also, allow insertion of brackets at logically allowable places in	
		the WHERE/FROM clauses.	
		DPT for fieldname before table name.	
		Refer responses using nested SQL queries to team leaders.	5

9	(e)	Alternative 1: INSERT INTO Book VALUES (837023, "Kenyan Safari", "Karen Matu", "African Travel Guides")	
		Alternative 2: INSERT INTO Book (BookID, Title, Author, Publisher) VALUES (837023, "Kenyan Safari", "Karen Matu", "African Travel Guides")	
		mark for INSERT INTO Book; mark for correct field values. If alternative 2 is used, the order of the values and fieldnames must correspond to each other;	
		The values Kenyan Safari, Karen Matu and African Travel Guides must be in single or double quotation marks for the mark to be awarded. Accept the value 837023 with or without quotation marks.	
		A Minor errors in transcribing the data from the question into the answer. A omission of brackets	2

June 2017 Paper 2

10 4	1 mark for AO2 (analyse) and 2 marks for AO3 (programming)	9
	Mark Scheme	
	AO2 (analyse) – 1 mark:	
	1 mark for correctly identifying the table in the data model that needs to be updated (Job) and the condition that should be used to identify the correct record in the table to update (JobID = 206).	
	Note: The AO2 mark for analysing the data model should be awarded regardless of whether correct SQL syntax is used or not as it is for data modelling, not syntactically correct SQL programming	
	AO3 (programming) – 2 marks:	
	1 mark for correct SQL syntax in two of the three clauses (UPDATE, SET, WHERE) OR	
	2 marks for fully correct SQL	
	Example Solution	
	UPDATE Job SET JobDuration = "01:30" WHERE JobID = 206	

Additional Guidance AO3 marks: A. Any type of quotation marks or hashes for delimiters for JobDuration or no A. The value 206 if it is delimited by any type of quotation mark A. Any sensible format for the time data eg "01.30", "1:30", "1:30.00" etc. A. Time given as a decimal ie 1.5 A. Table name given before fieldname I. Quotation marks around fieldnames I. Any attempt to also change value of InGarage 10 All marks AO3 (programming) 2 Method 1: INSERT INTO PartUsedForJob VALUES (206, 12, 2) Method 2: INSERT INTO PartUsedForJob (JobID, PartID, QuantityUsed) VALUES (206, 12, 2) 1 mark for correct INSERT INTO clause 1 mark for correct VALUES clause MAX 1 if SQL not fully working eg because of extra clauses A. List of fields in any order for method 2, but to get the VALUES mark in method 2, order of fields list in INSERT INTO must match order of values in VALUES A. The value(s) 206 and 12 if they are delimited by any type of quotation mark

10 6 3 marks for AO2 (analyse) and 2 marks for AO3 (programming)

5

Mark Scheme

AO2 (analyse) - 3 marks:

1 mark for correctly analysing the data model and identifying the tables that data needs to be extracted from (Part, PartUsedForJob) and the fields that need to be extracted (PartID, Description, Price, QuantityUsed), and including these and no other tables or fields in the query A. Including the table Job which is not needed, as long as it is correctly linked in by a condition

1 mark for correctly identifying how the data in the required tables should be combined to produce the desired result (the linking condition - PartUsedForJob.PartID = Part.PartID)

1 mark for identifying the correct conditions to use within the model for the JobID field (JobID = 93) and for using the correct logical operators between all of the conditions (if a linking condition is also used)

Note: The AO2 marks for analysing the data model should be awarded regardless of whether correct SQL syntax is used or not as they are for data modelling, not syntactically correct SQL programming

AO3 (programming) - 2 marks:

1 mark for correct SQL in two or three of the four clauses (SELECT, FROM, WHERE, ORDER BY)

OR

2 marks for fully correct SQL

Example Solutions

Example 1

```
SELECT PartID, Description, Price, QuantityUsed
FROM Part, PartUsedForJob
WHERE JobID = 93
AND PartUsedForJob.PartID = Part.PartID
ORDER BY PartID
```

Example 2

```
SELECT PartID, Description, Price, QuantityUsed
FROM Part INNER JOIN PartUsedForJob ON
PartUsedForJob.PartID = Part.PartID
WHERE JobID = 93
ORDER BY PartID
```

Overall MAX 4 if solution does not work fully

Additional Guidance

AO2 marks:

Mark(s) can be awarded for the correct logical conditions even if the required tables are not identified as being used by the query

Ignore unnecessary clause PartUsedForJob.JobID = Job.JobID

AO3 marks:

Accept table names before fieldnames separated by a full stop.

Accept use of Alias/AS command eg FROM Part AS P then use of P as the table name but note that command Alias is not required eg FROM Part P.

Accept INNER JOIN written as one word ie INNERJOIN or just as JOIN

Accept ORDER BY written as one word ie ORDERBY.

Accept ASC at end of ORDER BY clause.

Accept insertion of spaces into fieldnames.

Accept use of " or ' as delimiters around number 93.

Ignore unnecessary brackets.

DPT for unnecessary punctuation – allow one semicolon at the very end of the statement, but not at the end of each clause.

DPT for fieldname before table name.

For the **DPT** points, the penalisation is in terms of number of clauses of SQL code not marks ie if fieldname is before table name in two out of four clauses of SQL then this could count as three clauses of correct SQL

Refer responses using nested SQL queries to team leaders.

Refer responses using RIGHT JOIN OR LEFT JOINT to team leaders.

June 2013 Comp 3

9	(c)	FurnitureID INT PRIMARY KEY NOT NULL // FurnitureID INT PRIMARY KEY(FurnitureID) Optional		Note that currency is not a valid SQL type
		FurnitureName VARCHAR(30)		Allow lengths
		Category VARCHAR(10)		after numeric
		Price SMALLMONEY		types e.g.
		SupplierName VARCHAR(20)		INT(11) as
			3	these are
		1 mark for FurnitureID, with sensible data type		allowed in
		and identified as primary key		MySQL.
		1 mark for two other fields with sensible data		
		types and lengths OR 2 marks for all four other		
		fields with sensible data types and lengths		
		A any sensible types. Lengths do not need to be specified.		

Valid alternative SQL types are:

- Alternative types For FurnitureID: smallint, mediumint, integer, any text type (see below)
- Alternative types for Price: money, float, real, decimal, double, numeric, int, smallint, mediumint, integer
- Alternative types for text fields: char, varchar, nchar, nvarchar, ntext, longvarchar, varchar2, nvarchar2, text, tinytext, mediumtext, longtext

Answers using a syntax that is clearly not SQL should be awarded zero marks. But:

- ignore punctuation errors e.g. unnecessary colons or commas.
- answers in SQL style syntax but using non-SQL data types can be credited but MAX 1 of 2 for data types if any non-SQL types used.

9	(d)	SELECT CustomerName, TelephoneNumber	
	107.00	FROM Customer, CustomerOrder,	
		CustomerOrderline	
		WHERE FurnitureID=10765	
		AND Customer.CustomerID=	
		CustomerOrder.CustomerID	
		AND CustomerOrder.OrderID=	
		CustomerOrderLine.OrderID	
		ORDER BY CustomerName (ASC)	
		1 mark for correct two fields in SELECT clause	
		1 mark for correct three tables in FROM clause	
		1 mark for FurnitureID = 10765	
		1 mark for Customer.CustomerID =	0000
		CustomerOrder.CustomerID, joined to other conditions with AND	6
		1 mark for CustomerOrder.OrderID =	
		CustomerOrderLine.OrderID, joined to other	
		conditions with AND	
		1 mark for ORDER BY CustomerName, ASC is optional	
		OR	
		SELECT CustomerName, TelephoneNumber	
		FROM Customer INNER JOIN CustomerOrder ON	
		Customer.CustomerID=CustomerOrder.Custom erID INNER JOIN CustomerOrderLine ON	
		CustomerOrder.OrderID=CustomerOrderLine.Or	

derID

WHERE FurnitureID = 10765 ORDER BY CustomerName (ASC)

1 mark for correct two fields in SELECT clause

1 mark for correct three tables in FROM clause

1 mark for INNER JOIN using

Customer.CustomerID=CustomerOrder.Custom

1 mark for INNER JOIN using

CustomerOrder.OrderID=CustomerOrderLine.Or derID

1 mark for FurnitureID = 10765

1 mark for ORDER BY CustomerName, ASC is optional

Marks for SELECT and FROM statements should not be awarded if additional fields/tables included.

Marks can be awarded for the conditions in the WHERE statement even if the required tables are not present in the FROM.

Accept FurnitureID with no quotation marks, single quotation marks or double quotation marks.

Accept table names before fieldnames.

Accept use of Alias/AS command e.g. FROM Customer AS C then use of C as table name. Accept insertion of spaces into fieldnames Ignore unnecessary clause

CustomerOrderLine.FurnitureID=Furniture.Furnti ureID

I unnecessary brackets

DPT for unnecessary punctuation – allow one semicolon at the very end of the statement, but not at the end of each clause.

DPT for fieldname before table name.

Refer responses using nested SQL queries to team leaders.

9	(e)	One mark for tick in co mark if more than one	rrect row. Do not award row is ticked.	
		Command	Correct? (Tick One)	
		ALTER TABLE	✓	1
		CREATE FIELD		
		INSERT COLUMN		

Specimen Paper 2

09	4	All marks AO3 (programming)	_
		Method 1:	2
		INSERT INTO RaceEntryAndResult VALUES (6,27,"00:00.00")	
		Method 2:	
		INSERT INTO RaceEntryAndResult (RaceNumber, AthleteNumber, TimeSet) VALUES (6,27,"00:00.00")	
		Method 3 (Default Time Assumed):	
		INSERT INTO RaceEntryAndResult(RaceNumber, AthleteNumber) VALUES (6, 27)	
		1 mark for correct INSERT INTO clause 1 mark for correct VALUES clause	
		A. default time delimited by any type of quotation mark or hashes or no delimiter A. any sensible variation on the default time eg "0:00",	
		"00:00:00", or just 0 A. the values 6 and 27 if they are delimited by any type of quotation mark	
		A. list of fields in any order for method 2, but to get the VALUES mark in method 2, order of fields list in INSERT INTO must match order of values in VALUES	

09	5	1 mark for AO2 (analyse) and 2 marks for AO3 (programming)	3
		Mark Scheme	
		AO2 (analyse) – 1 mark:	
		1 mark for correctly identifying the table in the data model that needs to be updated (RaceEntryAndResult) and the conditions that should be used to identify the correct record to in the table to update – with both conditions linked by the correct logical operator	
		Note: The AO2 mark for understanding the data model should be awarded regardless of whether correct SQL syntax is used or not as they are for data modelling, not syntactically correct SQL programming	
		AO3 (programming) – 2 marks:	

1 mark for correct SQL syntax in two of the three clauses (UPDATE, SET, WHERE)

OR

2 marks for correct SQL syntax in all three clauses – to get two marks, there must be fully correct SQL syntax and all three clauses must be present, but it might be possible that the AO2 mark was not awarded eg if OR was used instead of AND

Example Solution

```
UPDATE RaceEntryAndResult
SET TimeSet = "00:18.76"
WHERE AthleteNumber = 27 AND RaceNumber = 6
```

Additional Guidance

AO3 marks:

A. any type of quotation marks or hashes for delimiters for TimeSet or no delimiters

A. the values 27 and 6 if they are delimited by any type of quotation mark

A. any sensible format for the time data eg "18.76", "18:76", "0:18:76" etc.

3 marks for AO2 (analyse) and 2 marks for AO3 (programming) 5 Mark Scheme AO2 (analyse) - 3 marks: 1 mark for correctly understanding the data model and identifying the tables that data needs to be extracted from and the fields that need to be extracted, and including these and no other tables or fields in the query 1 mark for correctly identifying how the data in the required tables should be combined to produce the desired result (the linking condition) 1 mark for identifying the correct conditions to use within the model for the RaceNumber and TimeSet fields to retrieve the required data and for using the correct logical operators between all of the conditions Note: The AO2 marks for understanding the data model should be awarded regardless of whether correct SQL syntax is used or not as they are for data modelling, not syntactically correct SQL programming AO3 (programming) - 2 marks:

1 mark for correct SQL syntax in two of the four clauses (SELECT, FROM, WHERE, ORDER BY)

OR

2 marks for correct SQL syntax in all four clauses – to get two marks, there must be fully correct SQL syntax and all four clauses must be present, but there could be mistakes in the marks awarded for AO2 e.g. an incorrect or missing condition

Example Solutions

Example 1

Example 2

SELECT AthleteNumber, Forename, Surname,
TimeSet
FROM Athlete INNER JOIN RaceEntryAndResult
ON Athlete.AthleteNumber =

RaceEntryAndResult.AthleteNumber WHERE RaceNumber = 6 AND TimeSet <> "00:00.00" ORDER BY TimeSet

Additional Guidance

AO2 marks:

Mark(s) can be awarded for the correct logical conditions even if the required tables are not identified as being used by the query Accept alternatives for not equal to that are correct in the context of the data model eg > or !=

Accept any sensible variation on the default time eg "0:00", "00:00:00", or just 0

Ignore unnecessary clause Race.RaceNumber =
RaceEntryAndResult.RaceNumber

AO3 marks:

Accept table names before fieldnames.

Accept use of Alias/AS command eg FROM Athlete AS A or FROM Athlete A then use of A as table name.

Accept INNER JOIN written as one word i.e. INNERJOIN.

Accept ORDER BY written as one word i.e. ORDERBY.

Accept ASC at end of ORDER BY clause.

Accept insertion of spaces into fieldnames.

Accept use of ", ' or # as delimiters for times.

Accept use of " or ' as delimiters for around number 6.

Ignore unnecessary brackets.

DPT for unnecessary punctuation – allow one semicolon at the very end of the statement, but not at the end of each clause.

DPT for fieldname before table name.

Refer responses using nested SQL queries to team leaders.