Task 2: database design and development (part A)

ScotAuction sells property in Aberdeen, Dundee, Edinburgh, Glasgow, Inverness, Perth and Stirling.

To register a property for sale, ScotAuction requests the following details from sellers: name, email address, telephone number and home address. ScotAuction gives each seller a unique ID and will contact the seller if an offer is made.

Every property registered for sale must have the following information recorded: house number, street, city, postcode, asking price and estimated property value. ScotAuction generates a unique reference code for all properties. Sellers should also state the number of bedrooms in the property.

A seller can have multiple properties for sale.

A property cannot be listed for sale without the seller's details being recorded first.

2a ScotAuction wants to create a database to store the seller and property details.

Complete the property details in the analysis of inputs table below.

(2 marks)

Seller details:	**Property details:**
Seller ID Seller name Seller address Email address Telephone number	1 mark for identifying: • Reference code 1 mark for identifying the following seven property details: • House number • Street • City • Postcode • Asking price • Estimated property value • Number of bedrooms

- Check your answers carefully, as you cannot return to part A after you hand it in.
- When you are ready, hand part A to your teacher or lecturer and collect part B.

Candidate name_____ Candidate number_____

Task 2: database design and development (part B)

2b Complete the data dictionary below, by identifying the primary and foreign keys in the relational database.

(2 marks)

Entity: Seller					
Attribute name	**Key**	**Type**	**Size**	**Required**	**Validation**
sellerName		text	50	Y	
sellerAddress		text	255	Y	
sellerID	PK	text	4	Y	
email		text	100	N	
telephoneNumber		text	11	Y	Length = 11

Entity: Property					
Attribute name	**Key**	**Type**	**Size**	**Required**	**Validation**
houseNumber		number		Y	
street		text	75	Y	
city		text	9	Y	Restricted choice: Aberdeen, Dundee, Edinburgh, Glasgow, Inverness, Perth, Stirling
postcode		text	8	Y	
propertyRef	PK	text	15	Y	
sellerID	FK	text	4	Y	
numberOfBedrooms		number		Y	
estimatedValue		number		Y	Range: >= 0 AND <= 300000000
askingPrice		number		Y	Range: >= 0 AND <= 300000000

- Check your answers carefully, as you cannot return to part B after you hand it in.
- When you are ready, hand part B to your teacher or lecturer and collect part C.

Candidate name_____ Candidate number_____

Task 2: database design and development (part C)

2c Your teacher or lecturer will give you a database file containing two linked tables.

(i) The asking price for propertyRef DUN-101 has been recorded incorrectly. This should be changed from £105500 to £112000.

Implement an SQL statement that will make the required change to the asking price.

(2 marks)

Print evidence of the SQL statement and the Property table, clearly showing that the change has been implemented.

```
UPDATE Property
SET askingPrice = 112000
WHERE propertyRef = "DUN-101";
```

(ii) Implement an SQL statement that will add the following details of a new seller to the database.

sellerID:	1502
sellerName:	Eve Grace
sellerAddress:	128 Cameron Drive Edinburgh EH4 5DS
email:	EveGrace@yehoo.net
telephoneNumber:	0131 279100

(2 marks)

Print evidence of the SQL statement and the Seller table, clearly showing that the change has been implemented.

```
INSERT INTO Seller(sellerID, sellerName, sellerAddress, email, telephoneNumber)
VALUES ("1502", "Eve Grace", "128 Cameron Drive Edinburgh EH4 5DS",
"EveGrace@yehoo.net", "0131 279100");
```

(iii) ScotAuction is running a workshop to give sellers advice on how to achieve a higher sale price. Due to the limited spaces available, ScotAuction is only inviting selected sellers to attend.

Implement an SQL statement that will display the seller's email address and telephone number and the property's postcode for properties that have three bedrooms and an asking price of less than £150000.

(4 marks)

Print evidence of the SQL statement and the output.

```
SELECT email,  telephoneNumber, postcode
FROM Seller, Property
WHERE seller.sellerid = property.sellerid
AND numberOfBedrooms = 3 AND askingPrice < 150000;
```

email	telephoneNum	postcode
ksimp@eyecloud.com	01382 52196	DD9 8PN
ckane@msnopy.com	0131 676221	EH48 8MH
marioph@liive.com	01738 66045	IV47 2YQ
Humphry@liive.com	01738 48908	IV10 3RH
cpark@eyecloud.com	01738 31943	PH38 9TA
terry@aeioul.com	01738 80979	PH9 7GU
boftx@coldmail.com	01786 19187	FK11 4TA
iansutherland@gmile.com	01786 55483	FK10 9MG

Output

2d ScotAuction would like a list of seller IDs and asking prices for properties in Glasgow. The list should be sorted showing the lowest price first.

The following incorrect SQL statement is written:

```
SELECT Seller.sellerID, price
FROM Seller, Property
WHERE town = "Glasgow" AND Seller.sellerID = Property.sellerID
ORDER BY askingPrice ASC;
```

Test this SQL statement.

State two reasons why this SQL statement produces the wrong output.

(2 marks)

Reason 1 town field doesn't exist
Reason 2 price field doesn't exist

2e The initial analysis identified the following functional requirements for the database. It should:

- allow ScotAuction to store a seller's email address and telephone number
- allow sellers to state an estimated value of their property
- record key details about each property, including the address and the number of bedrooms
- limit the value and location of the properties that can be entered

Use the above analysis to evaluate the database in terms of fitness for purpose.

(1 mark)

1 mark for stating the database meets all the requirements.

Candidate name_____ Candidate number_____