location(country, <u>cnumber</u>)     airport(city, <u>ano</u>, cnumber, year)     works(<u>worker</u>, <u>ano</u>)

1. (2.5) The SQL query lists

```
SELECT distinct worker FROM works WHERE EXISTS
    (SELECT ano FROM airport WHERE cnumber=100 AND works.ano=airport.ano);
```

   (a) workers who only work in airports in UK.
   (b) workers who work in at least one airport in UK.
   (c) workers who work in at most one airport in UK.
   (d) workers who work in airports both in UK and outside UK.

2. (2.5) The SQL query lists

```
SELECT DISTINCT worker FROM works WHERE ano IN
  (SELECT ano FROM  airport WHERE cnumber NOT IN
     (SELECT cnumber FROM location WHERE country='NZ'));
```

   (a) workers who work in airports in NZ and outside NZ.
   (b) workers who only work in airports in NZ.
   (c) workers who only work in airports outside NZ.
   (d) workers who work in at least one airport outside NZ.

3. (2.5) For the sample database instance, give the output of the following query:

```
SELECT city, ano FROM airport A
WHERE EXISTS (SELECT * FROM airport where A.cnumber = cnumber AND A.ano > ano)
  AND EXISTS (SELECT * FROM airport where A.cnumber = cnumber AND A.ano < ano)
```

4. (2.5) The following query is equivalent to

```
SELECT year FROM airport A    WHERE NOT EXISTS
  (SELECT * FROM airport where A.year < year);
```

   (a) SELECT year FROM airport A     WHERE year NOT IN
           (SELECT year FROM airport where A.year < year);
   (b) SELECT year FROM airport A     WHERE year NOT IN
           (SELECT year FROM airport where A.year > year);
   (c) SELECT year from airport     WHERE year NOT IN
           (SELECT DISTINCT A.year FROM airport A, airport B
              WHERE A.year < B.year);
   (d) none of the above