

Course: Database management
Unit: Introduction to the relational model
Test

PART I (50 points):

Draw a relational diagram with at least three tables.

PART II:

Compute the following relational algebra operations.

r:

A	B	C
1	2	3
4	5	6
7	8	9

s:

A	B	C
1	2	1
4	6	5
7	8	9

- 1.- (4 points) $r \cup s$
- 2.- (4 points) $r - s$
- 3.- (4 points) $r \cap s$
- 4.- (4 points) $\Pi_{B,C}(s)$
- 5.- (4 points) $\sigma_{A \neq C}(s)$
- 6.- (10 points) $(\Pi_{B,C}(s)) \times (\rho_t(\sigma_{A \neq C}(s)))$

u:

A	D	E
1	2	1
4	6	5
9	8	7

- 7.- (10 points) $r \bowtie u$
- 8.- (10 points) $\Pi_{r.A, B, C, D, E}(\sigma_{r.A = u.A}(r \times u))$