9913
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S.E comps- A

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

Assignment -2

Q.1 A]

1. $\Pi_{name}(\sigma_{code='cs3020'}(student \bowtie enrolledIn))$

2. $\Pi_{code}(\sigma_{name='Hector'}(student \bowtie enrolledIn \bowtie subject))$

3. $\Pi_{lecturer}(\sigma_{code='cs1500'}(subject))$

4. $\Pi_{lecturer}(\sigma_{code='cs1500'} \vee code='cs3020'(subject))$

5.

6. $\Pi_{name}(\sigma_{code='cs1500'} \vee code='cs3010'(student \bowtie enrolledIn))$

7. $\Pi_{name}(\sigma_{code='cs1500'} \wedge code='cs1200'(student \bowtie enrolledIn))$

8.

9. $\Pi_{code}(subject)$

10. $\Pi_{name}(student)$

11. $\Pi_{name}(\sigma_{code='cs1500'}(student \bowtie enrolledIn))$

12. $\pi_{name}(\sigma_{lecturer='Roger'}(student \bowtie enrolledIn \bowtie subject))$

13. $\pi_{name}(\sigma_{lecturer!='Roger'}(student \bowtie enrolledIn \bowtie subject))$

B] 1.
```
SELECT s.name
FROM students
JOIN enrolledIn e ON s.id = e.id
WHERE e.code = 'cs3020';
```

2.
```
SELECT su.code, su.lecturer
FROM enrolledIn e
JOIN subject su ON e.code = su.code
JOIN student s ON s.id = ed.id
WHERE s.name = 'Hector'
```

3.
```
SELECT lecturer
FROM subject
WHERE code = 'cs1500'
```

4.
```
SELECT DISTINCT lecturer
FROM subject
WHERE code IN('cs1500', 'cs3020')
```

6.
```
SELECT s.name
FROM student s
JOIN enrolledIn e on s.id = e.id
WHERE e.code IN('cs1500', 'cs3010')
```

7. SELECT s.name
FROM student s
JOIN enrolledIn e1 ON s.id = e1.id
JOIN enrolledIn e2 on s.id = e2.id
WHERE e1.code = 'CS1500' and e2.code = 'CS1200'

9. SELECT DISTINCT code
FROM subject

10. SELECT name
FROM student

11. SELECT s.name
FROM student s
JOIN enrolledIN e ON s.id = e.id
WHERE e.code = 'CS1500'

12. SELECT s.name
FROM student s
JOIN enrolledIn e ON s.id = e.id
JOIN subject su ON e.code = su.code
WHERE su.lecturer = 'Roger'

13. SELECT S.name
FROM student s
JOIN enrolledIn e ON s.id=e.id
JOIN subject su ON e.code=su.code
WHERE su.lecturer!='Roger'

Q.2

A) B) 1. $\pi_{eid}(\sigma_{aid}(\rho_{Boing}, Certified) \bowtie Certified)$

2. $\pi_{ename}(\sigma_{aid}(\rho_{Boeing}, Certified) \bowtie Employees)$

3. $\pi_{aid}(\sigma_{from='LA' \text{ and } to='NY'}(Flights \bowtie Aircrafts))$

4. ~~$\pi_{Flno}(Flights)$~~ $- \pi_{Flno}(\sigma_{salary \geq 100000}(Employess \bowtie Certified))$

5. $\pi_{Flno}(Flights) - \pi_{Flno}(\sigma_{salary < 100000}(Employees \bowtie Certified))$

6. $\pi_{ename}(\sigma_{range > 3000 \text{ and } aid}$

7. $\pi_{eid}(\sigma_{salary = max(salary)}(Employees))$

8. $\pi_{eid}(\sigma_{salary =}$

9.

B]

1. SELECT eid
   FROM Certified
   WHERE aid IN (SELECT aid FROM Aircraft WHERE aname LIKE 'Boeing%')

2. SELECT ename
   FROM Employees
   WHERE eid IN(SELECT eid FROM Certified WHERE eid IN
   (SELECT aid FROM Aircraft WHERE aname LIKE 'Boeing%'))

3. SELECT aid
   FROM Aircraft
   WHERE irange >= (SELECT distance FROM ~~Flights~~ Flights
   WHERE from = 'LA' AND to = 'NY')

7. SELECT eid
   FROM ~~Emp~~ Employees
   WHERE salary = (SELECT MAX(salary) FROM Employees)

10. SELECT eid
    FROM Certified
    GROUP BY eid
    HAVING ~~eid~~ COUNT(*) = 3

Q.3

A] 1. ~~Sname~~ (

1. $\Pi_{name}(\sigma_{age>25}(User))$

2. $\sigma_{id>2 \vee age!=31}(User)$

3. $\sigma_{u.OccupationID = o.OccupationID}(User \bowtie Occupation)$

4. $User \bowtie Occupation \bowtie City$

5. $\Pi_{name}(\sigma_{cityName="Boston"}(User \bowtie City))$

Q.4

1. $\pi_{pizzeria}(\sigma_{age<18}(Frequents \bowtie Person))$

2. $\pi_{name}(\sigma_{gender="female" \wedge (pizza="mushroom" \vee pizza="pepperoni")}(Eats \bowtie Person))$

3. $\pi_{name}(\sigma_{gender="female" \wedge (pizza="mushroom" \wedge pizza="pepperoni")}(Eats \bowtie Person))$

4. $\pi_{pizzeria}(\sigma_{name="Amy" \wedge price<10\,600}(Eats \bowtie serves))$

6. $\pi_{name, pizza}(\pi_{name, pizza}(Eats) - \pi_{name, pizza}(Eats \bowtie Frequents \bowtie Serves))$

7. $\pi_{name}(\pi_{name}(Frequents) - \pi_{name}(Frequents \bowtie Serves - Eats))$

8. $\pi_{name}(\pi_{name}(Frequents) \div \pi_{name}(Frequents \bowtie Serves - Eats))$

9. $\pi_{pizzeria}(\sigma_{pizza='pepperoni' \wedge price=min(price)}(\sigma_{pizza='pepperoni'}(Serves)))$

Q.5

→ a) $\pi_{eid}(\pi_{eid,bid}(own) / \pi_{brand})$

This is the correct option that returns the set of eids who own all brands.