

Q1) Answer $\leftarrow \pi_{\text{Fname, minit, lname}} (\sigma_{\text{Dno} = 1 \text{ or } \text{dno} = 4})$

Results:

Fname	Lname
James	Borg
Ahmad	Jabbar
Jennifer	Wallace
Alicia	Zelaya

Q2)

Answer $\leftarrow \pi_{\text{dname}} (\text{Dept_Location_number} = 4)$

Results:

Dname
Administration

(Q3)

Answer $\leftarrow \pi_{SSN}(\text{employee_number} = 1 \text{ and hours} \geq 10.0)$

Results:

SSN
123456789
453453453

Q4)

Join:

$\text{emp_all} \leftarrow \text{employee} \bowtie_{\text{ssn}=\text{essn}} \text{Works_on} \bowtie_{\text{pno}=\text{pnumber}} \text{Project}$

$\text{emp_OK} \leftarrow \sigma_{\text{dno}=5 \text{ and } \text{pname}=\text{"ProductX"} \text{ and } \text{hours} > 10.0}(\text{emp_all})$

$\text{answer} \leftarrow \pi_{\text{fname}, \text{minit}, \text{lname}}(\text{emp_OK})$

Selects:

$\text{emp_Dept_5} \leftarrow \sigma_{\text{dno}=5}(\text{Employee})$

$\text{emp_Prod_X} \leftarrow \sigma_{\text{pname}=\text{"ProductX"}}(\text{Project})$

$\text{emp_Dept_5_Prod_X} \leftarrow \text{emp_Dept_5} \bowtie_{\text{ssn}=\text{essn}} \text{Works_on} \bowtie_{\text{pno}=\text{P\#}} \text{Proj_Prod_X}$

$\text{emp_OK} \leftarrow \sigma_{\text{hours} > 10.0}(\text{emp_Dept_5_Prod_X})$

$\text{answer} \leftarrow \pi_{\text{fname}, \text{minit}, \text{lname}}(\text{emp_OK})$

Results:

Fname	Lname
John	Smith

Q5)

$\text{Wong-SSN} \leftarrow \pi_{\text{ssn}}(\sigma_{\text{lname} = \text{"Wong"} \text{ and } \text{fname} = \text{"Franklin"}}(\text{Employee}))$

$\text{Answer} \leftarrow \pi_{\text{fname, minit, lname}}(\text{Employee } \bowtie_{\text{super-ssn} = \text{ssn Wong-ssn}}$

Results:

Fname	Lname
John	Smith
Ramesh	Narayan
Joyce	English

Q6)

answer \leftarrow pname \sum (Hours) and Project number = Works_on.pno

Result:

(Project X Works_on)

Results:

Pname	Total_hours
ProductX	52.5
ProductY	37.5
ProductZ	50
Computerization	55
Reorganization	25
Newbenefits	55

(Q7)



Answer $\leftarrow \pi_{ssn=essn}(\text{Project} * (\text{employee}_{ssn}))$

Result:

SSN

Results:

SSN
NULL

Q8)

Dept_max_sal (Dnumber, max_sal) \leftarrow ~~max~~ max_sal(employee)

Answer \leftarrow T_Dname, max_sal (Dept_Max_sal * Department)

result:

Dname	max_sal
Research	40,000
Admin.	43,000
H.Q.	55,000