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Answer to the question no 3(a):

Output of the given relational algebra:

i.  $\Pi_{\text{Emp\_id, Name, Dept}} (\sigma_{\text{Dept}='IT'} (\text{Employee}))$

**Ans:**

Emp_id	Name	Department
E 123	Axy	IT
E 127	Cxy	IT
E 150	Fxy	IT

ii.  $\Pi_{\text{Dept}} (\text{dept } \mathbf{G}_{\text{sum(salary)}} (\text{Employee}))$

**Ans:**

Department	Salary
IT	120000
HRM	62000
Account	25000

iii.  $\Pi_{\text{Name, Dept salary}} (\sigma_{\text{Dept='IT' \& Salary} > (\Pi_{\text{avg(salary)}} (\text{Employee}))} (\text{Employee}))$

**Ans:**

Name	Department	Salary
Axy	IT	40000
Cxy	IT	35000
Fxy	IT	45000

iv.  $\Pi_{\text{Name, City}} (\sigma_{\text{Employee.Emp\_id=City.Emp\_id \& City='Dhaka'}} (\text{Employee} \times \text{City}))$

**Ans:**

Employee.Emp_id	Name	Department	Salary	Manager_id	Zip	City	City.Emp_id
E 150	Fxy	IT	45000	E 123	D-2050	Dhaka	E 150