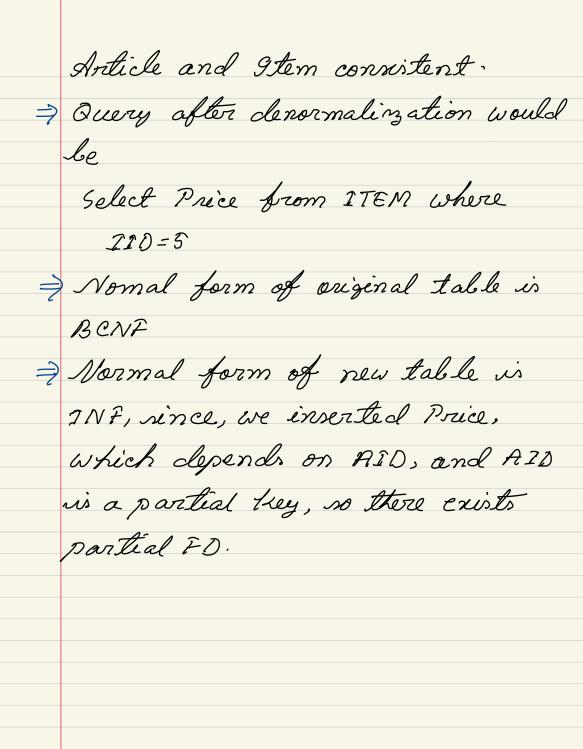
Problem 1 Sheet-6 (a) Query! All Employees per city. This query requires a join between Store and Employee relation Employee and Store table is in BCNF since, for Employee table, Name, Salary and SID depends on E-D which is the superkey. For Store table City and EID depends on 570. For the above guery, we can simply put city column to Employee table to make denormalization. The denormalized schema would be > Employee [EID, Name, Salary, SID, City] > We denormalized the table to avoid join operation for performance gain. Downside of this denormalization

would be, we have redundant data for list of employees for city > To keep data consistent, for every store injust, we need to enter corresponding store data in employee table also with city information. > Normal form of original schema is BCNF > Normal form of new schema is ? Query after denormalization: Select * from employees orderly city

Query: Price of all item in given invoice IID=5 This query requires a join between 9 tem and Anticle table. Following decisions are made:-=) To denormaline the table 9 tem and Article to find the Price, We can simply put Price in Item table and the denormalized schema will be ITEM (210, 510, AID, Count, Price) => Downside of this denormalization would be, we need to insert redundant data to freep both



(i) We can remove DISTINCT here since select * will essentially retrieve all rows. (ii) As are are retrieving data only for EID 2002, we can simply omit GROUPBY and HAVING clause and put it in a WHERE clause. Also, when we include WHERE, there is no need for MAX aggregate also. (ii) We can simply remove the soin Column and greery over only Employee table to find the SID