Q1.

∏ name(σ dept\_name = Comp.Sci ^ semester = Spring ^ year = 2009 (teaches **⋈** teaches.ID = instructor.IDinstructor))

G min(average\_salary)dept\_name (dept\_name G avg(salary) as average\_salary , depart\_name (instructors))

Q2.

Books(isbn, title, author, publisher)

Accession(accessionno, isbn)

Users(userid, name, deptid)

Departs(deptid, deptname)

Q3.



db.inventory.find({

$ and : [{"size.h" : {$lt : 25}}, {"size.uom":"in"}]}, {item : 1, qty:1}).sort({qty: -1}

})

b.

db.inventory.aggregate([

{$match: {qty: {$gt:50}}},

{ $sort: {"status":1}}, { $group: {\_id: {status: "$status"}, totalAmt : {$sum: "$qty"}}}

])

Q4.

db.inventory.find({instock: {$elemMatch: {warehouse: "A", qty: {$gt: 30}}}})



db.inventory.find({"instock.0.qty": {$gt : 30} })

db.inventory.find({instock: {$size: 1}})