**QUESTION SET-4**

**QUESTION 1: Books Collection Queries**

**a) Retrieve all books whose ratings include at least one rating greater than 4.5.**

db.Books.find({ ratings: { $elemMatch: { $gt: 4.5 } } })

**b) Find books that belong to either the "Fiction" or "Mystery" genre.**

db.Books.find({ genres: { $in: ["Fiction", "Mystery"] } })

**c) Identify books authored by "J.K. Rowling" and published after the year 2000 (use the details document).**

db.Books.find({

author: "J.K. Rowling",

"details.publicationYear": { $gt: 2000 }

})

**d) Sort the books in ascending order of their publication year and skip the first 3 records.**

db.Books.find().sort({ "details.publicationYear": 1 }).skip(3)

**e) Group books by their genre and calculate the total number of books in each genre.**

db.Books.aggregate([

{ $unwind: "$genres" },

{ $group: { \_id: "$genres", totalBooks: { $sum: 1 } } }

])

**QUESTION 2: Members Collection Queries**

**a) Retrieve members who have borrowed more than 3 books but do not have "Science Fiction" as a preference.**

db.Members.find({

borrowedBooks: { $size: { $gt: 3 } },

preferences: { $ne: "Science Fiction" }

})

**b) Find members who have borrowed both "The Great Gatsby" and "1984" from the library.**

db.Members.find({

borrowedBooks: { $all: ["The Great Gatsby", "1984"] }

})

**c) Display the names and contact details of members whose membership type is "Premium."**

db.Members.find(

{ membershipType: "Premium" },

{ name: 1, contact: 1, \_id: 0 }

)

**d) Create a unique index on the membershipType field to ensure no two members can have the same membership type.**

db.Members.createIndex({ membershipType: 1 }, { unique: true })

**e) Use aggregation to project only the member's name, membership type, and total number of borrowed books, and then filter out members with fewer than 2 borrowed books.**

db.Members.aggregate([

{

$project: {

name: 1,

membershipType: 1,

totalBorrowedBooks: { $size: "$borrowedBooks" }

}

},

{ $match: { totalBorrowedBooks: { $gte: 2 } } }

])