1.

{

    "\_id": OBJECTID,

    "text": STRING,

    "title": STRING,

    "num\_chars": INTEGER,

    "date": DATE,

    "category": STRING,

    "terms": [

        {

            "term": STRING,

            "term\_count": INTEGER

        }

    ]

}

2.

a) db.documents.countDocuments();

b) db.documents.find({ category: “Sports” }, {projection: { text: 1 }})

c) db.documents.aggregate([

{ $unwind: “$terms” },

{ $group: { \_id: “$terms.term”, count: { $sum: 1}}},

{ $project: { \_id: 0, term: “$\_id”}}

])

d) db.documents.aggregate([

{ $match: { title: “Arizona”}},

{ $unwind: “$terms” },

{ $group: {\_id: null, count: { $sum: “$terms.term\_count”}}}

])

e) db.documents.aggregate([

{ $match: { category: “Seasons”}},

{ $unwind: “$terms” },

{ $group: {\_id: null, count: { $sum: “$terms.term\_count”}}}

])

f) db.documents.aggregate([

{ $unwind: “$terms”},

{ $match: { term: “months”}},

{ $group: {\_id: null, count: { $sum: “$terms.term\_count”}}}

])

g) db.documents.aggregate([

{ $unwind: “$terms”},

{ $group: {\_id: “$\_id”, count: { $sum: “$terms.term\_count”}}},

{ $sort: {count: -1}},

{ $limit: 1 }

])

h) db.documents.aggregate([

{ $unwind: “$terms”},

{ $group: {\_id: “$terms.term”, count: { $sum: “$terms.term\_count”}}},

{ $sort: {count: -1}},

{ $limit: 1 }

])