Roll No ....

B. E. (Third Year): Semester-VI	Course Code: UCS661 Course Name: Database Engineer
April 8, 2022	Saturday, 11 AM – 1 PM
Duration: 2.00 Hrs. Max. Marks: 35	Name of Instructor: Dr. Sumana Maiti

Note: Attempt any five questions in sequence. Assume any missing data. Please be precise and concise while writing.

Q. 1. Write down MongoDB command equivalent to the following SQL commands.
(1+1+1+2+2)

    (a) Select * from course where status = "A" and age=30
    (b) Select user_id from course where age>25
    (c) Select * from course where status = "A" order by user_id ASC
    (d) Select count(user_id) from course
    (e) Update course set status = "C" where

Q. 2. What are the different comparison operators available in MongoDB? Discuss each one of them with proper examples. (2+5)

Q.3. (a) State the difference between Mongo Shell and Mongo Compass. (2)
    (b) Define capped collection with proper example. (3)
    (c) State the difference between BSON and JSON (2)

Q.4. (a) Define CAP theorem and discuss different properties of CAP theorem. (3)
    (b) Discuss briefly which of the properties of CAP theorem, MongoDB supports and how does it support those properties. (4)

Q.5. (a).

```
>db.pqr.insertMany([
{name: "ABC",
time_days: {primary: 5, secondary: 10, advanced:15},
Status: "A",
```

```
 _id: "345"
},
{name: "XYZ",
time_days: {primary: 6, secondary: 8, advanced:12},
Status: "B",
 _id: "347"
}
```

(i). Write a query to find the names, where time_days for secondary is 10. (2)

(ii). Write a query to find the time_days where status is B. (2)

(b). Describe briefly what is the requirement of replication in MongoDB (3)

Q.6.(a) Create a collection student to insert following students' details in the collection. The details of the students are given in the following table . (5)

Name	Score		id
	Subject	Marks	
Ravi	Math	90	001
	Physics	80	
	Chemistry	85	
Rahul	Math	95	002
	Physics	89	
	Chemistry	78	

(b) Find the names of the student who score > 85 in Physics. (2)

7. (a) What are the different array update operators in MongoDB (2)

(b) Consider the following document (3+2)

```
{ _id: 1
Marks: [67,78,89,99]}
```

(i) Write the command to add [56, 77, 88] to the array at the second position of the existing array 'Marks'.

(ii) Write the command to to sort the elements of the existing array 'Marks'.